



MISSION CONTROL CENTER

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ADCO
ISO

CATO

MISSION OPERATIONS



1
00:00:06,230 --> 00:00:04,150
well good morning and welcome to this

2
00:00:08,549 --> 00:00:06,240
friday edition of international space

3
00:00:10,150 --> 00:00:08,559
station update you're joining us now

4
00:00:12,070 --> 00:00:10,160
inside of the international space

5
00:00:14,070 --> 00:00:12,080
station flight control room where the

6
00:00:16,230 --> 00:00:14,080
orbit 2 team is currently on shift

7
00:00:19,109 --> 00:00:16,240
monitoring systems on board the orbiting

8
00:00:21,029 --> 00:00:19,119
complex the team is taking a quick quick

9
00:00:23,269 --> 00:00:21,039
two minute break as the station's

10
00:00:24,630 --> 00:00:23,279
currently out of radio communication

11
00:00:26,630 --> 00:00:24,640
with the ground but they'll be

12
00:00:28,390 --> 00:00:26,640
reacquiring its signal in just a few

13
00:00:30,150 --> 00:00:28,400

moments

14

00:00:31,910 --> 00:00:30,160

today's team is being led by flight

15

00:00:33,990 --> 00:00:31,920

director jerry jason

16

00:00:35,430 --> 00:00:34,000

and joining him at the capcom console

17

00:00:40,310 --> 00:00:35,440

talking to the crew

18

00:00:42,950 --> 00:00:41,270

so

19

00:00:44,790 --> 00:00:42,960

currently on board is the crew of

20

00:00:46,709 --> 00:00:44,800

expedition 30 and they are being led by

21

00:00:48,389 --> 00:00:46,719

nasa astronaut dan burbank they're in

22

00:00:50,630 --> 00:00:48,399

the front left row

23

00:00:53,670 --> 00:00:50,640

and behind him are russian cosmonauts

24

00:00:55,510 --> 00:00:53,680

anton shkaplerov and anatoly ivanishin

25

00:00:57,430 --> 00:00:55,520

and then moving across the back row you

26
00:01:00,229 --> 00:00:57,440
have european space agency astronaut

27
00:01:01,910 --> 00:01:00,239
andre kuipers nasa astronaut don pettit

28
00:01:03,830 --> 00:01:01,920
and finally in the front row on the

29
00:01:06,310 --> 00:01:03,840
right is russian cosmonaut oleg

30
00:01:10,070 --> 00:01:06,320
kononenko

31
00:01:12,630 --> 00:01:10,080
so quite a busy week for the crew

32
00:01:14,469 --> 00:01:12,640
even with an off-duty day on monday

33
00:01:16,950 --> 00:01:14,479
the crew started their

34
00:01:19,749 --> 00:01:16,960
work day this week with an off-duty day

35
00:01:20,550 --> 00:01:19,759
following some uh activities that they

36
00:01:23,030 --> 00:01:20,560
were

37
00:01:25,270 --> 00:01:23,040
called in to do over the weekend as

38
00:01:27,670 --> 00:01:25,280

they were moving cargo out of that

39

00:01:30,630 --> 00:01:27,680

recently docked european space agency

40

00:01:33,190 --> 00:01:30,640

atv-3 cargo resupply vehicle

41

00:01:35,030 --> 00:01:33,200

following a failure of the primary

42

00:01:37,749 --> 00:01:35,040

channel of the russian equipment control

43

00:01:39,910 --> 00:01:37,759

system or rex which is used to provide

44

00:01:40,950 --> 00:01:39,920

power to the spacecraft while it is

45

00:01:43,350 --> 00:01:40,960

docked

46

00:01:45,350 --> 00:01:43,360

to the international space station so

47

00:01:47,749 --> 00:01:45,360

commander burbank and his five crewmates

48

00:01:48,870 --> 00:01:47,759

gave up some of their off-duty time last

49

00:01:50,630 --> 00:01:48,880

saturday

50

00:01:51,990 --> 00:01:50,640

to unload some of the critical cargo

51
00:01:52,630 --> 00:01:52,000
from atv

52
00:01:56,789 --> 00:01:52,640
in

53
00:01:59,350 --> 00:01:56,799
needed to be undocked

54
00:02:01,749 --> 00:01:59,360
on monday in case they weren't able to

55
00:02:03,990 --> 00:02:01,759
restore all the necessary power

56
00:02:05,910 --> 00:02:04,000
however flight controllers both here in

57
00:02:07,429 --> 00:02:05,920
houston texas and also in toulouse

58
00:02:08,869 --> 00:02:07,439
france and

59
00:02:10,949 --> 00:02:08,879
the russian mission control center

60
00:02:12,710 --> 00:02:10,959
outside of moscow were able to

61
00:02:13,589 --> 00:02:12,720
successfully connect a backup power

62
00:02:15,190 --> 00:02:13,599
channel

63
00:02:17,430 --> 00:02:15,200

on saturday

64

00:02:19,990 --> 00:02:17,440

ensuring that atv3 would have all the

65

00:02:21,990 --> 00:02:20,000

necessary power to keep its systems

66

00:02:25,350 --> 00:02:22,000

running and

67

00:02:27,670 --> 00:02:25,360

calling off any need for a potential

68

00:02:29,589 --> 00:02:27,680

undocking so due to all that activity

69

00:02:32,550 --> 00:02:29,599

the crew was given an off-duty day on

70

00:02:34,470 --> 00:02:32,560

monday to recuperate a little uh in

71

00:02:37,030 --> 00:02:34,480

response to their given up off-duty time

72

00:02:38,949 --> 00:02:37,040

over the weekend

73

00:02:41,350 --> 00:02:38,959

moving on to tuesday starting off with

74

00:02:43,110 --> 00:02:41,360

commander burbank who was doing some

75

00:02:44,949 --> 00:02:43,120

conductivity tests with the electrical

76
00:02:47,190 --> 00:02:44,959
systems inside of the waste and hygiene

77
00:02:49,030 --> 00:02:47,200
compartment this was done following a

78
00:02:50,470 --> 00:02:49,040
few voltage discrepancies that were

79
00:02:52,150 --> 00:02:50,480
noted last week

80
00:02:54,150 --> 00:02:52,160
with that urine monitoring system by

81
00:02:56,229 --> 00:02:54,160
controllers here on the ground

82
00:02:59,110 --> 00:02:56,239
and aside from doing that important

83
00:03:01,830 --> 00:02:59,120
maintenance work on that vital system

84
00:03:03,589 --> 00:03:01,840
burbank participated in an educational

85
00:03:06,149 --> 00:03:03,599
event with some students at the owa

86
00:03:08,229 --> 00:03:06,159
henry middle school in austin texas and

87
00:03:10,790 --> 00:03:08,239
he was joined by fellow nasa astronaut

88
00:03:12,949 --> 00:03:10,800

don pettit and esa astronaut andre

89

00:03:15,270 --> 00:03:12,959

kuipers

90

00:03:16,229 --> 00:03:15,280

russian cosmonaut anton shkaplerov spent

91

00:03:17,270 --> 00:03:16,239

his day

92

00:03:18,790 --> 00:03:17,280

with the

93

00:03:20,309 --> 00:03:18,800

russian science experiment that's

94

00:03:22,949 --> 00:03:20,319

looking at studying the veins in the

95

00:03:24,149 --> 00:03:22,959

lower extremities of astronauts

96

00:03:25,830 --> 00:03:24,159

the legs

97

00:03:27,910 --> 00:03:25,840

of these expedition crew members during

98

00:03:30,390 --> 00:03:27,920

space flight are barely used due to that

99

00:03:32,229 --> 00:03:30,400

microgravity environment so studying

100

00:03:34,789 --> 00:03:32,239

everything from muscle structure to

101

00:03:37,589 --> 00:03:34,799

those veins it's very important to

102

00:03:39,670 --> 00:03:37,599

seeing if any problems start to crop up

103

00:03:41,110 --> 00:03:39,680

his fellow russian cosmonaut anatoly

104

00:03:43,830 --> 00:03:41,120

ivanishin was working with the russian

105

00:03:47,030 --> 00:03:43,840

matroyska experiment named after the

106

00:03:48,949 --> 00:03:47,040

russian nested dolls it's a radiation

107

00:03:50,630 --> 00:03:48,959

research project that looks to monitor

108

00:03:52,949 --> 00:03:50,640

any of the uh the potential radiation

109

00:03:55,429 --> 00:03:52,959

levels that the crew are receiving

110

00:03:57,990 --> 00:03:55,439

during their space flights

111

00:03:59,589 --> 00:03:58,000

meanwhile oleg kononenko on tuesday was

112

00:04:00,710 --> 00:03:59,599

working with the russian relaxation

113

00:04:02,149 --> 00:04:00,720

experiment

114

00:04:03,910 --> 00:04:02,159

which is looking to determine the

115

00:04:06,550 --> 00:04:03,920

effects of different propulsion system

116

00:04:08,630 --> 00:04:06,560

exhausts on the earth's upper atmosphere

117

00:04:10,309 --> 00:04:08,640

andre kuipers was

118

00:04:13,110 --> 00:04:10,319

working on some of the express payload

119

00:04:16,870 --> 00:04:13,120

racks specifically the nanoracks on

120

00:04:19,830 --> 00:04:16,880

platform 2 and iraq's being a low cost

121

00:04:21,670 --> 00:04:19,840

payload bay experiment that allows

122

00:04:23,990 --> 00:04:21,680

students and researchers from around the

123

00:04:25,670 --> 00:04:24,000

globe cheap and

124

00:04:27,189 --> 00:04:25,680

effective access to getting their

125

00:04:28,390 --> 00:04:27,199

experiments on board the international

126

00:04:30,150 --> 00:04:28,400

space station

127

00:04:32,469 --> 00:04:30,160

finally don pettit on tuesday was

128

00:04:35,189 --> 00:04:32,479

working on the micro microgravity

129

00:04:37,430 --> 00:04:35,199

science glove box doing a laptop

130

00:04:41,030 --> 00:04:37,440

computer swap that helps to control all

131

00:04:43,030 --> 00:04:41,040

the experiments conducted inside

132

00:04:44,790 --> 00:04:43,040

moving on to wednesday commander burbank

133

00:04:46,710 --> 00:04:44,800

was working with the station's attitude

134

00:04:48,710 --> 00:04:46,720

control system and he was removing and

135

00:04:51,270 --> 00:04:48,720

replacing one of the global positioning

136

00:04:53,430 --> 00:04:51,280

systems inside and he was assisted by

137

00:04:55,670 --> 00:04:53,440

european space agency astronaut andre

138

00:04:58,310 --> 00:04:55,680

kuipers seen in the foreground of your

139

00:05:00,310 --> 00:04:58,320

screen that system will be used to

140

00:05:03,029 --> 00:05:00,320

assist in sending navigation data to the

141

00:05:05,590 --> 00:05:03,039

spacex dragon capsule next month as it

142

00:05:08,390 --> 00:05:05,600

flies in close proximity to the station

143

00:05:10,550 --> 00:05:08,400

for grapple and birthing

144

00:05:12,150 --> 00:05:10,560

meanwhile anton shkaplerov started his

145

00:05:14,070 --> 00:05:12,160

day immediately with the sprout 2

146

00:05:16,390 --> 00:05:14,080

investigation which is a russian look

147

00:05:18,230 --> 00:05:16,400

into preventing unfavorable impacts on

148

00:05:19,990 --> 00:05:18,240

how well the astronauts stay hydrated

149

00:05:21,749 --> 00:05:20,000

during their spaceflights

150

00:05:23,749 --> 00:05:21,759

and while he was doing this anatoly

151

00:05:26,230 --> 00:05:23,759

ivanishin was working on the russian

152

00:05:28,950 --> 00:05:26,240

interactions experiment which is a

153

00:05:31,189 --> 00:05:28,960

psychological investigation to study the

154

00:05:32,870 --> 00:05:31,199

behavior of a small group throughout

155

00:05:34,390 --> 00:05:32,880

again these long duration expedition

156

00:05:36,070 --> 00:05:34,400

space flights

157

00:05:38,230 --> 00:05:36,080

then the third russian cosmonaut oleg

158

00:05:40,070 --> 00:05:38,240

kononenko was working on the pneumocard

159

00:05:42,629 --> 00:05:40,080

experiment which is a study of the

160

00:05:44,550 --> 00:05:42,639

adaptation of the cardiovascular system

161

00:05:46,790 --> 00:05:44,560

of these crew members during their long

162

00:05:49,270 --> 00:05:46,800

stints in space

163

00:05:51,749 --> 00:05:49,280

and meanwhile andre kuipers was

164

00:05:53,909 --> 00:05:51,759

assisting burbank with that gps removal

165

00:05:56,309 --> 00:05:53,919

and replacement and doing a little bit

166

00:05:57,510 --> 00:05:56,319

more work on the nano racks platforms

167

00:05:59,830 --> 00:05:57,520

getting some

168

00:06:02,469 --> 00:05:59,840

familiarization with the microscope 1

169

00:06:05,350 --> 00:06:02,479

and microscope 2 devices inside of those

170

00:06:07,830 --> 00:06:05,360

payloads then don pettit was working on

171

00:06:09,909 --> 00:06:07,840

the vo2 max experiment which looks to

172

00:06:12,710 --> 00:06:09,919

study the astronaut's aerobic capacity

173

00:06:15,270 --> 00:06:12,720

both during before and after their space

174

00:06:17,830 --> 00:06:15,280

flights and began the first of a few

175

00:06:19,830 --> 00:06:17,840

days of working on c-spins which is a

176

00:06:22,309 --> 00:06:19,840

japanese study that looks to see how

177

00:06:26,309 --> 00:06:22,319

microgravity affects the growth and life

178

00:06:30,309 --> 00:06:28,870

yesterday thursday commander burbank was

179

00:06:31,469 --> 00:06:30,319

doing some maintenance work on the

180

00:06:33,749 --> 00:06:31,479

atmosphere

181

00:06:35,670 --> 00:06:33,759

revitalization system

182

00:06:37,590 --> 00:06:35,680

inspecting and cleaning a bacteria

183

00:06:39,749 --> 00:06:37,600

filter to ensure that the station's

184

00:06:40,870 --> 00:06:39,759

breathing air is

185

00:06:42,469 --> 00:06:40,880

safe and

186

00:06:44,629 --> 00:06:42,479

reliable for the astronauts while

187

00:06:47,110 --> 00:06:44,639

they're on board also doing some work on

188

00:06:50,870 --> 00:06:47,120

the water recovery system replacing a

189

00:06:52,710 --> 00:06:50,880

recycle filter tank assembly

190

00:06:55,029 --> 00:06:52,720

meanwhile russian cosmonaut anton

191

00:06:57,110 --> 00:06:55,039

shkaplerov was removing a few components

192

00:06:59,749 --> 00:06:57,120

from the poisk module or the mini

193

00:07:02,390 --> 00:06:59,759

research module 2 and transferring those

194

00:07:04,469 --> 00:07:02,400

to the current the docked progress 46

195

00:07:05,990 --> 00:07:04,479

vehicle which is the current russian

196

00:07:08,629 --> 00:07:06,000

resupply vehicle docked to the

197

00:07:10,469 --> 00:07:08,639

international space station

198

00:07:12,390 --> 00:07:10,479

his fellow russian cosmonaut anatoly

199

00:07:14,309 --> 00:07:12,400

ivanishin took his turn with that

200

00:07:16,469 --> 00:07:14,319

russian sprut experiment again looking

201
00:07:17,430 --> 00:07:16,479
at how well the astronauts stay hydrated

202
00:07:19,430 --> 00:07:17,440
in space

203
00:07:21,589 --> 00:07:19,440
and also was doing some cargo activities

204
00:07:24,230 --> 00:07:21,599
with that progress vehicle

205
00:07:26,550 --> 00:07:24,240
removing a few items and moving some

206
00:07:28,550 --> 00:07:26,560
trash from the station into the vehicle

207
00:07:30,790 --> 00:07:28,560
and also updating the station's

208
00:07:34,150 --> 00:07:30,800
inventory management system you can see

209
00:07:36,629 --> 00:07:34,160
that progress 46 vehicle there docked to

210
00:07:39,990 --> 00:07:38,390
the nadir port of the international

211
00:07:44,230 --> 00:07:40,000
space station on the piers docking

212
00:07:48,390 --> 00:07:46,230
where it will remain for a few weeks

213
00:07:50,869 --> 00:07:48,400

until it is eventually undocked and then

214

00:07:53,270 --> 00:07:50,879

re-enters the earth's atmosphere

215

00:07:55,270 --> 00:07:53,280

and will be destroyed upon re-entry that

216

00:07:57,830 --> 00:07:55,280

undocking is currently planned to take

217

00:07:59,990 --> 00:07:57,840

place uh on april 19th and we will have

218

00:08:02,550 --> 00:08:00,000

coverage for that here on nasa tv

219

00:08:04,869 --> 00:08:02,560

beginning at 6 00 a.m central time 7 a.m

220

00:08:08,230 --> 00:08:04,879

eastern

221

00:08:09,990 --> 00:08:08,240

so also on thursday ola kononenko was

222

00:08:11,830 --> 00:08:10,000

removing and replacing a few tools in

223

00:08:14,390 --> 00:08:11,840

the russian maintenance area and

224

00:08:16,790 --> 00:08:14,400

updating their work area

225

00:08:19,110 --> 00:08:16,800

and then european space agency astronaut

226

00:08:21,270 --> 00:08:19,120

andre kuipers was swapping out one of

227

00:08:23,350 --> 00:08:21,280

the laptops on board and then updating

228

00:08:25,110 --> 00:08:23,360

some of the some of its software and

229

00:08:27,430 --> 00:08:25,120

setting up a new virtual network for the

230

00:08:29,830 --> 00:08:27,440

computers to communicate and also

231

00:08:32,389 --> 00:08:29,840

participated in his own public affairs

232

00:08:34,550 --> 00:08:32,399

event speaking with a

233

00:08:37,110 --> 00:08:34,560

planetarium in his native country of the

234

00:08:39,509 --> 00:08:37,120

netherlands and giving an inside look of

235

00:08:41,269 --> 00:08:39,519

his space flight experiences to some of

236

00:08:43,269 --> 00:08:41,279

his fellow countrymen down here on the

237

00:08:45,750 --> 00:08:43,279

ground

238

00:08:47,829 --> 00:08:45,760

the final expedition 30 crew member don

239

00:08:50,070 --> 00:08:47,839

pettit on thursday was again continuing

240

00:08:52,470 --> 00:08:50,080

some of his work with that c-spins

241

00:08:54,630 --> 00:08:52,480

activity you can see him here working in

242

00:08:56,949 --> 00:08:54,640

the japanese aerospace exploration

243

00:08:59,110 --> 00:08:56,959

agency's kibo module on board the

244

00:09:01,190 --> 00:08:59,120

station and in conjunction with that he

245

00:09:03,030 --> 00:09:01,200

was also working on the bass experiment

246

00:09:06,070 --> 00:09:03,040

which stands for burning and suppression

247

00:09:07,910 --> 00:09:06,080

of solids which is an investigation into

248

00:09:10,150 --> 00:09:07,920

examining the burning and extinction

249

00:09:13,269 --> 00:09:10,160

characteristics of a wide variety of

250

00:09:15,030 --> 00:09:13,279

fuel samples and microgravity

251
00:09:17,910 --> 00:09:15,040
then moving on today

252
00:09:19,910 --> 00:09:17,920
to today friday commander burbank was

253
00:09:22,310 --> 00:09:19,920
calibrating the oxygen sensor of the

254
00:09:24,150 --> 00:09:22,320
compound specific analyzer which is the

255
00:09:27,269 --> 00:09:24,160
device that was recently delivered on

256
00:09:29,030 --> 00:09:27,279
that european space agency atv3 cargo

257
00:09:30,710 --> 00:09:29,040
resupply vehicle

258
00:09:32,870 --> 00:09:30,720
he was also doing some maintenance work

259
00:09:34,870 --> 00:09:32,880
again today on that waste and hygiene

260
00:09:36,470 --> 00:09:34,880
compartment doing a manual fill of the

261
00:09:38,310 --> 00:09:36,480
flush water tank

262
00:09:41,110 --> 00:09:38,320
and then a little bit later today he'll

263
00:09:42,870 --> 00:09:41,120

be conducting some on-orbit eye exams

264

00:09:45,269 --> 00:09:42,880

which will include still video and

265

00:09:47,590 --> 00:09:45,279

images of the optic nerve he'll be doing

266

00:09:49,910 --> 00:09:47,600

those alongside european space agency

267

00:09:52,150 --> 00:09:49,920

astronaut andre kuipers and nasa

268

00:09:54,870 --> 00:09:52,160

astronaut don pettit

269

00:09:56,710 --> 00:09:54,880

meanwhile anton shkaplerov was doing an

270

00:09:59,269 --> 00:09:56,720

audit of the station's fire protection

271

00:10:01,509 --> 00:09:59,279

equipment today and working on the colom

272

00:10:03,190 --> 00:10:01,519

crystal experiment which is a russian

273

00:10:04,710 --> 00:10:03,200

experiment that gathers data about

274

00:10:07,350 --> 00:10:04,720

charged particles in a weightless

275

00:10:11,110 --> 00:10:09,269

shkaplerov will also be charging the

276

00:10:12,389 --> 00:10:11,120

iridium satellite phone that he'll be

277

00:10:15,509 --> 00:10:12,399

carrying

278

00:10:18,630 --> 00:10:15,519

in his return vehicle

279

00:10:20,870 --> 00:10:18,640

he so used tma-22 of which

280

00:10:21,670 --> 00:10:20,880

shkaplerov will be the commander of when

281

00:10:23,590 --> 00:10:21,680

he

282

00:10:25,350 --> 00:10:23,600

comes back home with

283

00:10:28,310 --> 00:10:25,360

expedition 30 commander burbank and

284

00:10:32,069 --> 00:10:28,320

fellow cosmonaut anatoly ivanishin

285

00:10:36,389 --> 00:10:34,069

anatoly ivanishin today is working on

286

00:10:38,389 --> 00:10:36,399

the russian identification experiment

287

00:10:41,350 --> 00:10:38,399

which looks to investigate the dynamic

288

00:10:43,910 --> 00:10:41,360

loads on the station's uh structure

289

00:10:46,150 --> 00:10:43,920

during different dynamic events such as

290

00:10:48,550 --> 00:10:46,160

docking reboots

291

00:10:50,870 --> 00:10:48,560

execution of physical exercises by the

292

00:10:53,910 --> 00:10:50,880

crew members and also extra extra

293

00:10:55,590 --> 00:10:53,920

vehicular activities

294

00:10:57,350 --> 00:10:55,600

meanwhile allah kononenko will be

295

00:10:59,509 --> 00:10:57,360

continuing some of his work installing

296

00:11:01,590 --> 00:10:59,519

some more maintenance devices in the

297

00:11:03,910 --> 00:11:01,600

russian segments work area

298

00:11:07,190 --> 00:11:03,920

andre kuipers is returning to some work

299

00:11:10,150 --> 00:11:07,200

with that vo2 max experiment and also be

300

00:11:12,470 --> 00:11:10,160

working with the atv3 gas gas

301
00:11:14,389 --> 00:11:12,480
pressurization system configuring the

302
00:11:16,630 --> 00:11:14,399
gas control panel inside for its first

303
00:11:18,550 --> 00:11:16,640
time use

304
00:11:20,630 --> 00:11:18,560
and then the final expedition 30 crew

305
00:11:22,710 --> 00:11:20,640
member don pettit is continuing some

306
00:11:25,269 --> 00:11:22,720
more work again with that c-spins which

307
00:11:27,190 --> 00:11:25,279
is japanese investigation into the

308
00:11:28,389 --> 00:11:27,200
growth and life cycle of plant life and

309
00:11:31,190 --> 00:11:28,399
microgravity

310
00:11:32,710 --> 00:11:31,200
and will also be using and familiarizing

311
00:11:36,310 --> 00:11:32,720
himself with the station's super

312
00:11:39,269 --> 00:11:36,320
sensitive hdtv camera in order to record