



Sergey Ryazanskiy
Expedition 38 Flight Engineer

1
00:00:06,550 --> 00:00:03,909
the members of the international space

2
00:00:09,509 --> 00:00:06,560
station crew are now all veteran space

3
00:00:11,589 --> 00:00:09,519
fliers and all eager for the opportunity

4
00:00:13,509 --> 00:00:11,599
to make a contribution to the future of

5
00:00:16,230 --> 00:00:13,519
human exploration

6
00:00:18,630 --> 00:00:16,240
dr oleg kotov is a native of simferopol

7
00:00:21,349 --> 00:00:18,640
in what is now ukraine but as the son of

8
00:00:23,509 --> 00:00:21,359
a soviet military officer he grew up all

9
00:00:25,750 --> 00:00:23,519
over russia and had his sights set on

10
00:00:29,349 --> 00:00:25,760
the military for his own career by the

11
00:00:32,150 --> 00:00:30,390
i moscow

12
00:00:34,870 --> 00:00:32,160
to become

13
00:00:37,910 --> 00:00:34,880

a military officer as well like my

14

00:00:41,590 --> 00:00:37,920

father my grandfather

15

00:00:46,229 --> 00:00:41,600

however i kept dreaming about space and

16

00:00:48,869 --> 00:00:46,239

while i was i had to select my major

17

00:00:51,590 --> 00:00:48,879

i was very careful about it and

18

00:00:54,709 --> 00:00:51,600

i became a military surgeon in the area

19

00:00:57,270 --> 00:00:54,719

of aerospace medicine after graduation

20

00:00:59,029 --> 00:00:57,280

from the kirov military medical academy

21

00:01:01,430 --> 00:00:59,039

kotov went to work at the gagarin

22

00:01:03,590 --> 00:01:01,440

cosmonaut training center as a doctor

23

00:01:05,270 --> 00:01:03,600

studying altitude physiology and the

24

00:01:07,590 --> 00:01:05,280

effects of space flight on the human

25

00:01:09,590 --> 00:01:07,600

body at the same time he studied

26

00:01:12,390 --> 00:01:09,600

diagnostics and methods of pilot

27

00:01:13,510 --> 00:01:12,400

selection and also earned a degree in

28

00:01:16,149 --> 00:01:13,520

patenting

29

00:01:18,469 --> 00:01:16,159

in 1996 he entered air force pilot

30

00:01:20,789 --> 00:01:18,479

school and was selected for cosmonaut

31

00:01:23,830 --> 00:01:20,799

training he made his first space flight

32

00:01:26,710 --> 00:01:23,840

in 2007 and completed two spacewalks as

33

00:01:29,830 --> 00:01:26,720

a flight engineer on expedition 15. he

34

00:01:31,830 --> 00:01:29,840

did another eva during expedition 22

35

00:01:35,109 --> 00:01:31,840

before becoming commander of the station

36

00:01:37,510 --> 00:01:35,119

for expedition 23 in 2010

37

00:01:40,149 --> 00:01:37,520

kotov then served as deputy chief of the

38

00:01:41,910 --> 00:01:40,159

gctc before starting training for this

39

00:01:43,910 --> 00:01:41,920
mission which presented another

40

00:01:47,270 --> 00:01:43,920
opportunity to fulfill the human

41

00:01:50,069 --> 00:01:47,280
instinct to learn new things

42

00:01:52,950 --> 00:01:50,079
it's a desire to

43

00:01:55,910 --> 00:01:52,960
understand the world around you to

44

00:01:58,310 --> 00:01:55,920
expand the area where we live

45

00:01:59,749 --> 00:01:58,320
to explore mars

46

00:02:04,149 --> 00:01:59,759
space

47

00:02:04,159 --> 00:02:10,710
star systems so it's

48

00:02:14,550 --> 00:02:12,150
a desire

49

00:02:16,790 --> 00:02:14,560
to learn something new dr sergey

50

00:02:19,830 --> 00:02:16,800
ryazanskiy is a rarity among russian

51
00:02:21,110 --> 00:02:19,840
cosmonauts one who was born and raised

52
00:02:23,670 --> 00:02:21,120
in moscow

53
00:02:26,150 --> 00:02:23,680
as the son of engineers and a grandson

54
00:02:28,150 --> 00:02:26,160
of mikhail razansky a leading soviet

55
00:02:31,030 --> 00:02:28,160
engineer specializing in missile and

56
00:02:33,270 --> 00:02:31,040
spacecraft radio guidance rozanski had

57
00:02:35,350 --> 00:02:33,280
his sights set on a career in science at

58
00:02:37,270 --> 00:02:35,360
a young age

59
00:02:39,030 --> 00:02:37,280
when i was a child i wanted to become a

60
00:02:41,910 --> 00:02:39,040
biologist

61
00:02:44,229 --> 00:02:41,920
so i was studying in a specialized

62
00:02:46,550 --> 00:02:44,239
school where we were majoring in biology

63
00:02:48,070 --> 00:02:46,560

so i knew that i would be a scientist i

64

00:02:51,270 --> 00:02:48,080

think i knew that

65

00:02:53,830 --> 00:02:51,280

since i was in the sixth grade

66

00:02:55,990 --> 00:02:53,840

i knew that i would

67

00:02:57,270 --> 00:02:56,000

try to go to the moscow state

68

00:02:59,110 --> 00:02:57,280

universities

69

00:03:01,509 --> 00:02:59,120

where he graduated with a degree in

70

00:03:03,830 --> 00:03:01,519

biochemistry and went straight to work

71

00:03:06,070 --> 00:03:03,840

at the institute for biomedical problems

72

00:03:08,470 --> 00:03:06,080

at the russian academy of sciences

73

00:03:10,309 --> 00:03:08,480

his specialization in ways to prevent

74

00:03:12,790 --> 00:03:10,319

the adverse effects caused by the

75

00:03:14,710 --> 00:03:12,800

absence of gravity got him involved in

76

00:03:17,509 --> 00:03:14,720

the space industry and sparked an

77

00:03:20,869 --> 00:03:17,519

interest in becoming a cosmonaut himself

78

00:03:23,270 --> 00:03:20,879

in 2003 he was selected to join ibmp's

79

00:03:25,030 --> 00:03:23,280

cosmonaut corps and completed basic

80

00:03:28,070 --> 00:03:25,040

training at the gagarin cosmonaut

81

00:03:30,149 --> 00:03:28,080

training center in 2006 he earned his

82

00:03:32,390 --> 00:03:30,159

doctorate in physiology and space

83

00:03:35,509 --> 00:03:32,400

medicine and in 2009

84

00:03:39,270 --> 00:03:35,519

he was crew commander in a 105 day long

85

00:03:43,030 --> 00:03:39,280

isolation experiment known as mars 500.

86

00:03:45,270 --> 00:03:43,040

by 2010 he was certified as a gctc test

87

00:03:47,589 --> 00:03:45,280

cosmonaut which he calls the most

88

00:03:52,710 --> 00:03:47,599

interesting job in the world because it

89

00:03:57,670 --> 00:03:55,030

anything you can think of is combined by

90

00:04:01,990 --> 00:03:57,680

this profession

91

00:04:03,429 --> 00:04:02,000

and being part of this industry is

92

00:04:06,390 --> 00:04:03,439

very interesting you have new

93

00:04:08,869 --> 00:04:06,400

technologies new approaches and you're

94

00:04:11,429 --> 00:04:08,879

always on the edge so to say you always

95

00:04:12,949 --> 00:04:11,439

know the latest developments

96

00:04:15,350 --> 00:04:12,959

it's very interesting to live this life

97

00:04:18,789 --> 00:04:15,360

it's very interesting to train for this

98

00:04:21,110 --> 00:04:18,799

life that's why i became cosmonaut

99

00:04:23,189 --> 00:04:21,120

u.s air force colonel mike hopkins is

100

00:04:25,670 --> 00:04:23,199

from south central missouri born in

101
00:04:27,749 --> 00:04:25,680
lebanon and raised a few miles away on a

102
00:04:30,150 --> 00:04:27,759
farm outside richland

103
00:04:32,070 --> 00:04:30,160
he credits his small town upbringing for

104
00:04:34,469 --> 00:04:32,080
his getting the chance to try everything

105
00:04:37,270 --> 00:04:34,479
in high school not only football and

106
00:04:39,430 --> 00:04:37,280
other sports but all school activities

107
00:04:40,790 --> 00:04:39,440
and for developing his interest in

108
00:04:43,030 --> 00:04:40,800
engineering

109
00:04:46,230 --> 00:04:43,040
my father was a pilot in the marines

110
00:04:49,430 --> 00:04:46,240
back in the early 60s uh he flew a4s and

111
00:04:52,230 --> 00:04:49,440
so there was aviation in in my family so

112
00:04:54,870 --> 00:04:52,240
that certainly piqued my interest in it

113
00:04:56,870 --> 00:04:54,880

and my interest in space my desire to

114

00:04:59,189 --> 00:04:56,880

become an astronaut

115

00:05:01,110 --> 00:04:59,199

started back in high school hopkins

116

00:05:03,830 --> 00:05:01,120

headed to the university of illinois to

117

00:05:06,070 --> 00:05:03,840

study aerospace engineering he also

118

00:05:08,550 --> 00:05:06,080

walked on to the football team and ended

119

00:05:10,070 --> 00:05:08,560

up as a starter and a team captain by

120

00:05:12,469 --> 00:05:10,080

the time he graduated with his

121

00:05:14,150 --> 00:05:12,479

bachelor's in aerospace engineering and

122

00:05:15,909 --> 00:05:14,160

a commission in the air force earned

123

00:05:17,990 --> 00:05:15,919

through the rotc

124

00:05:20,629 --> 00:05:18,000

after finishing a master's in aerospace

125

00:05:22,710 --> 00:05:20,639

engineering at stanford hopkins began

126

00:05:25,590 --> 00:05:22,720

his air force career in a laboratory

127

00:05:27,830 --> 00:05:25,600

working on space systems technologies

128

00:05:30,230 --> 00:05:27,840

then he moved on to become a flight test

129

00:05:32,550 --> 00:05:30,240

engineer even spending time as an

130

00:05:34,390 --> 00:05:32,560

exchange officer at the canadian flight

131

00:05:37,029 --> 00:05:34,400

test center in alberta

132

00:05:39,749 --> 00:05:37,039

in 2002 hopkins won a scholarship to

133

00:05:41,350 --> 00:05:39,759

study political science in italy after

134

00:05:44,310 --> 00:05:41,360

which he was assigned to work in

135

00:05:46,550 --> 00:05:44,320

acquisitions at the pentagon and then as

136

00:05:48,870 --> 00:05:46,560

a special assistant to the vice chairman

137

00:05:50,950 --> 00:05:48,880

of the joint chiefs of staff the job he

138

00:05:52,629 --> 00:05:50,960

had when he was selected as an astronaut

139

00:05:54,310 --> 00:05:52,639

in 2009

140

00:05:56,950 --> 00:05:54,320

he's the first member of his astronaut

141

00:05:59,350 --> 00:05:56,960

class to fly in space and eager to use

142

00:06:01,270 --> 00:05:59,360

his mission to try to help satisfy our

143

00:06:04,150 --> 00:06:01,280

desire to learn

144

00:06:06,070 --> 00:06:04,160

humans are always striving for for

145

00:06:07,909 --> 00:06:06,080

knowledge for knowing what's beyond the

146

00:06:11,670 --> 00:06:07,919

hill for knowing how

147

00:06:14,070 --> 00:06:11,680

each little thing works in in our world

148

00:06:15,670 --> 00:06:14,080

whether it's the human itself whether

149

00:06:17,270 --> 00:06:15,680

it's anything within biology the

150

00:06:19,189 --> 00:06:17,280

physical world

151
00:06:21,510 --> 00:06:19,199
all of that we

152
00:06:24,230 --> 00:06:21,520
we have this desire to know as much as

153
00:06:26,790 --> 00:06:24,240
we can about that and and the space

154
00:06:28,469 --> 00:06:26,800
station the international space station

155
00:06:31,189 --> 00:06:28,479
fits right into that

156
00:06:34,309 --> 00:06:31,199
dr koichi wakata was born and raised in

157
00:06:35,990 --> 00:06:34,319
saitama a bedroom community of tokyo he

158
00:06:37,909 --> 00:06:36,000
remembers watching the first moon

159
00:06:39,430 --> 00:06:37,919
landing on television and wishing he

160
00:06:41,350 --> 00:06:39,440
could fly in space

161
00:06:43,749 --> 00:06:41,360
but since there were no japanese

162
00:06:46,070 --> 00:06:43,759
astronauts then he put the dream aside

163
00:06:48,309 --> 00:06:46,080

as impractical but he had other

164

00:06:49,670 --> 00:06:48,319

interests including baseball and

165

00:06:52,469 --> 00:06:49,680

airplanes

166

00:06:54,710 --> 00:06:52,479

i was very fascinated

167

00:06:55,589 --> 00:06:54,720

by airplanes ever since i was a small

168

00:06:58,230 --> 00:06:55,599

boy

169

00:07:03,270 --> 00:06:58,240

and i always want to i wanted to become

170

00:07:04,550 --> 00:07:03,280

an engineer or pilot to to make and fly

171

00:07:06,950 --> 00:07:04,560

an airplane

172

00:07:08,950 --> 00:07:06,960

wakata pursued that dream at kyushu

173

00:07:11,189 --> 00:07:08,960

university where he earned a bachelor's

174

00:07:13,670 --> 00:07:11,199

degree in aeronautical engineering and a

175

00:07:15,510 --> 00:07:13,680

masters in applied mechanics and then

176

00:07:17,990 --> 00:07:15,520

started his career as a structural

177

00:07:19,830 --> 00:07:18,000

engineer for japan airlines

178

00:07:21,670 --> 00:07:19,840

two years later when japan's space

179

00:07:24,150 --> 00:07:21,680

agency advertised for astronaut

180

00:07:26,950 --> 00:07:24,160

candidates wakata applied and was

181

00:07:29,189 --> 00:07:26,960

selected in 1992 to begin astronaut

182

00:07:32,790 --> 00:07:29,199

training at nasa's johnson space center

183

00:07:35,270 --> 00:07:32,800

in houston in 1996 he was japan's first

184

00:07:36,950 --> 00:07:35,280

ever space shuttle mission specialist on

185

00:07:39,189 --> 00:07:36,960

a flight where he ran the shuttle's

186

00:07:42,230 --> 00:07:39,199

robot arm to deploy and retrieve

187

00:07:44,390 --> 00:07:42,240

satellites in 2000 he used his robotics

188

00:07:46,710 --> 00:07:44,400

expertise again on the shuttle flight

189

00:07:48,629 --> 00:07:46,720

that installed the z1 truss and a

190

00:07:50,550 --> 00:07:48,639

pressurized mating adapter on the

191

00:07:52,309 --> 00:07:50,560

international space station

192

00:07:54,309 --> 00:07:52,319

after he finished his doctorate in

193

00:07:57,510 --> 00:07:54,319

aeronautical engineering from kyushu

194

00:07:59,749 --> 00:07:57,520

university in 2004 he completed training

195

00:08:03,510 --> 00:07:59,759

in russia as a soyuz spacecraft flight

196

00:08:05,670 --> 00:08:03,520

engineer and then in 2009 became japan's

197

00:08:09,350 --> 00:08:05,680

first space station crew member as a

198

00:08:11,830 --> 00:08:09,360

part of expeditions 18 19 and 20 and

199

00:08:15,189 --> 00:08:11,840

expanded his robotics repertoire to

200

00:08:18,150 --> 00:08:15,199

include canadarm2 dexter and the robotic

201
00:08:20,070 --> 00:08:18,160
arm on japan's kibo laboratory module

202
00:08:22,309 --> 00:08:20,080
he's eager to keep doing what he can to

203
00:08:25,110 --> 00:08:22,319
prepare the way for future exploration

204
00:08:26,710 --> 00:08:25,120
and improve life on earth i think we can

205
00:08:29,430 --> 00:08:26,720
gain uh

206
00:08:32,149 --> 00:08:29,440
new knowledge new technologies that we

207
00:08:33,909 --> 00:08:32,159
benefit in our daily life on the ground

208
00:08:36,550 --> 00:08:33,919
by going to space

209
00:08:41,269 --> 00:08:36,560
and also i strongly believe a human

210
00:08:47,590 --> 00:08:44,949
for the survival of human species

211
00:08:50,550 --> 00:08:47,600
michael turin was born in colomna russia

212
00:08:52,790 --> 00:08:50,560
a historical town outside moscow but he

213
00:08:55,350 --> 00:08:52,800

lived in many places around the country

214

00:08:57,670 --> 00:08:55,360

growing up in a military family his

215

00:09:00,949 --> 00:08:57,680

interest in space flight did not focus

216

00:09:02,070 --> 00:09:00,959

on becoming a cosmonaut himself

217

00:09:04,150 --> 00:09:02,080

i did

218

00:09:06,310 --> 00:09:04,160

not

219

00:09:11,829 --> 00:09:06,320

have a period of my life when i was

220

00:09:14,070 --> 00:09:11,839

dreaming and doing all my all i could

221

00:09:18,150 --> 00:09:14,080

overcoming difficulties

222

00:09:19,430 --> 00:09:18,160

to become a cosmonaut i just loved this

223

00:09:21,750 --> 00:09:19,440

area

224

00:09:22,949 --> 00:09:21,760

and he focused on getting as close to it

225

00:09:24,710 --> 00:09:22,959

as he could

226

00:09:27,110 --> 00:09:24,720

turin earned a degree in engineering

227

00:09:28,949 --> 00:09:27,120

from the moscow aviation institute and

228

00:09:31,910 --> 00:09:28,959

went right to work for the rocket space

229

00:09:34,230 --> 00:09:31,920

corporation inergia as an engineer first

230

00:09:36,310 --> 00:09:34,240

specializing in ballistics and software

231

00:09:38,870 --> 00:09:36,320

development and later in methods of

232

00:09:41,110 --> 00:09:38,880

training cosmonauts methods he usually

233

00:09:43,030 --> 00:09:41,120

tried out on himself first

234

00:09:45,350 --> 00:09:43,040

after nine years on the job he was

235

00:09:47,670 --> 00:09:45,360

selected to join the cosmonaut corps

236

00:09:49,350 --> 00:09:47,680

turin made three spacewalks during his

237

00:09:52,550 --> 00:09:49,360

first trip to the international space

238

00:09:55,910 --> 00:09:52,560

station in 2001 as a flight engineer on

239

00:09:58,949 --> 00:09:55,920

expedition 3 and two more evas as flight

240

00:10:02,230 --> 00:09:58,959

engineer on expedition 14 in 2006 and

241

00:10:04,550 --> 00:10:02,240

2007. he's pleased to be contributing to

242

00:10:07,350 --> 00:10:04,560

physiological research that will prepare

243

00:10:09,509 --> 00:10:07,360

humans for future space exploration and

244

00:10:11,829 --> 00:10:09,519

even more interested in how some of the

245

00:10:14,949 --> 00:10:11,839

psychological results will be applied on

246

00:10:21,190 --> 00:10:18,389

they can be used not just in space

247

00:10:25,110 --> 00:10:21,200

exploration but can be propagated

248

00:10:26,069 --> 00:10:25,120

and applied uh to human relations in

249

00:10:26,870 --> 00:10:26,079

general

250

00:10:33,910 --> 00:10:26,880

and

251
00:10:35,269 --> 00:10:33,920
in various areas of our human activity

252
00:10:37,269 --> 00:10:35,279
human life

253
00:10:39,590 --> 00:10:37,279
rick mastracchio is a native of

254
00:10:41,990 --> 00:10:39,600
waterbury connecticut and grew up there

255
00:10:44,470 --> 00:10:42,000
in the 1960s interested in the space

256
00:10:46,389 --> 00:10:44,480
program but not with the idea that he'd

257
00:10:48,470 --> 00:10:46,399
ever fly in space himself

258
00:10:49,910 --> 00:10:48,480
when i was a small kid i didn't know you

259
00:10:51,030 --> 00:10:49,920
could even be an astronaut it never

260
00:10:53,110 --> 00:10:51,040
occurred to me

261
00:10:54,630 --> 00:10:53,120
i could be an astronaut someday but i

262
00:10:56,790 --> 00:10:54,640
was always interested in math and

263
00:10:58,310 --> 00:10:56,800

science i was always interested when the

264

00:11:00,949 --> 00:10:58,320

teacher spoke about

265

00:11:02,310 --> 00:11:00,959

aviation related topics or space

266

00:11:04,150 --> 00:11:02,320

science related topics you know when i

267

00:11:05,670 --> 00:11:04,160

was in grade school

268

00:11:07,509 --> 00:11:05,680

he took those interests to the

269

00:11:09,190 --> 00:11:07,519

university of connecticut the first

270

00:11:11,590 --> 00:11:09,200

person in his family ever to go to

271

00:11:13,430 --> 00:11:11,600

college and earned a bachelor of science

272

00:11:15,750 --> 00:11:13,440

degree in electrical engineering and

273

00:11:17,990 --> 00:11:15,760

computer science which got him a job at

274

00:11:19,750 --> 00:11:18,000

hamilton standard developing guidance

275

00:11:21,430 --> 00:11:19,760

and flight control systems while he

276

00:11:23,190 --> 00:11:21,440

finished a masters of science in

277

00:11:24,389 --> 00:11:23,200

electrical engineering at rensselaer

278

00:11:27,030 --> 00:11:24,399

polytechnic

279

00:11:28,949 --> 00:11:27,040

at that time he saw an ad from nasa

280

00:11:30,230 --> 00:11:28,959

looking for new astronauts and decided

281

00:11:32,150 --> 00:11:30,240

to apply

282

00:11:34,550 --> 00:11:32,160

what he got was a job offer from

283

00:11:37,430 --> 00:11:34,560

rockwell to work in shuttle operations

284

00:11:39,590 --> 00:11:37,440

and he moved to houston in 1987.

285

00:11:41,590 --> 00:11:39,600

three years later he joined nasa as an

286

00:11:43,590 --> 00:11:41,600

engineer specializing in software

287

00:11:45,829 --> 00:11:43,600

development then became a flight

288

00:11:47,829 --> 00:11:45,839

controller in ascent and entry guidance

289

00:11:51,110 --> 00:11:47,839

and procedures and was selected as an

290

00:11:52,230 --> 00:11:51,120

astronaut in 1996 after nine years of

291

00:11:54,150 --> 00:11:52,240

applying

292

00:11:55,990 --> 00:11:54,160

his first space shuttle flight was the

293

00:11:58,150 --> 00:11:56,000

2000 mission that outfitted the

294

00:12:00,790 --> 00:11:58,160

international space station's new zvezda

295

00:12:02,790 --> 00:12:00,800

module for its first permanent crew

296

00:12:05,990 --> 00:12:02,800

he made three spacewalks during his

297

00:12:07,829 --> 00:12:06,000

second trip to the station in 2007 on a

298

00:12:11,269 --> 00:12:07,839

mission that delivered a truss segment

299

00:12:14,790 --> 00:12:11,279

and a new gyroscope and three more evas

300

00:12:17,269 --> 00:12:14,800

on a 2010 resupply mission he sees this

301
00:12:19,829 --> 00:12:17,279
station as a means to support inevitable

302
00:12:22,389 --> 00:12:19,839
exploration well beyond the neighborhood

303
00:12:24,629 --> 00:12:22,399
of this blue planet

304
00:12:26,870 --> 00:12:24,639
we are meant to explore

305
00:12:28,389 --> 00:12:26,880
we being the people here on this planet

306
00:12:30,710 --> 00:12:28,399
earth we want to go out and see what's

307
00:12:32,389 --> 00:12:30,720
out there we want to know more about

308
00:12:34,550 --> 00:12:32,399
things and we can't just do that through