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EXPEDITION MANAGEMENT ENGINEER

1
00:00:18,150 --> 00:00:15,749
this is mission control houston and

2
00:00:19,910 --> 00:00:18,160
welcome to space station live

3
00:00:21,990 --> 00:00:19,920
looking down at the international space

4
00:00:24,070 --> 00:00:22,000
station flight control room the johnson

5
00:00:27,509 --> 00:00:24,080
space center in houston texas

6
00:00:29,029 --> 00:00:27,519
it's wednesday november 20th 2013.

7
00:00:30,790 --> 00:00:29,039
the orbit two team inside the room

8
00:00:33,110 --> 00:00:30,800
taking a quick breather while we wait to

9
00:00:35,030 --> 00:00:33,120
reacquire video and voice communication

10
00:00:37,030 --> 00:00:35,040
with the international space station

11
00:00:40,869 --> 00:00:37,040
they'll be monitoring systems on board

12
00:00:43,190 --> 00:00:40,879
controlling again from here in houston

13
00:00:45,910 --> 00:00:43,200

on board the crew of expedition 38

14

00:00:48,950 --> 00:00:45,920

six-man international crew led by

15

00:00:50,709 --> 00:00:48,960

uh russian cosmonaut oleg kotov two more

16

00:00:52,950 --> 00:00:50,719

russian cosmonauts sergey ryazanskiy and

17

00:00:54,549 --> 00:00:52,960

mikhail turin on board two nasa

18

00:00:57,029 --> 00:00:54,559

astronauts mike hopkins and rick

19

00:00:59,750 --> 00:00:57,039

mastracchio and one japanese astronaut

20

00:01:01,430 --> 00:00:59,760

koichi wakata

21

00:01:03,750 --> 00:01:01,440

fairly historic day for the

22

00:01:05,990 --> 00:01:03,760

international space station today

23

00:01:07,830 --> 00:01:06,000

as it marks the 15th anniversary since

24

00:01:09,109 --> 00:01:07,840

the launch of the very first element

25

00:01:10,789 --> 00:01:09,119

zarya

26
00:01:13,030 --> 00:01:10,799
which was launched in a proton rocket

27
00:01:15,510 --> 00:01:13,040
again 15 years ago in 1998 from the

28
00:01:18,070 --> 00:01:15,520
baikonur cosmodrome in kazakhstan

29
00:01:20,230 --> 00:01:18,080
zarya the russian word for sunrise

30
00:01:22,230 --> 00:01:20,240
as the craft signaled the dawn of the

31
00:01:24,230 --> 00:01:22,240
new age of human space flight and the

32
00:01:27,109 --> 00:01:24,240
new age of international cooperation in

33
00:01:29,990 --> 00:01:27,119
space so again today we celebrate 15

34
00:01:31,749 --> 00:01:30,000
years since the first launch of the

35
00:01:35,590 --> 00:01:31,759
first element that would eventually

36
00:01:38,550 --> 00:01:35,600
become the international space station

37
00:01:40,870 --> 00:01:38,560
meanwhile today on board oleg kotov

38
00:01:41,990 --> 00:01:40,880

current commander on board of expedition

39

00:01:44,550 --> 00:01:42,000

38

40

00:01:45,910 --> 00:01:44,560

doing a few experiment activities today

41

00:01:48,310 --> 00:01:45,920

starting off earlier today with the

42

00:01:50,230 --> 00:01:48,320

russian albedo experiment which uses

43

00:01:52,389 --> 00:01:50,240

specialized cameras on board the station

44

00:01:54,469 --> 00:01:52,399

to measure the earth's albedo

45

00:01:56,870 --> 00:01:54,479

which is the amount of solar radiation

46

00:01:59,590 --> 00:01:56,880

that's reflected back naturally from the

47

00:02:02,069 --> 00:01:59,600

earth's surface that experiment hoping

48

00:02:04,149 --> 00:02:02,079

to eventually develop some ways to

49

00:02:05,190 --> 00:02:04,159

generate electrical power for the

50

00:02:07,590 --> 00:02:05,200

station

51
00:02:10,469 --> 00:02:07,600
from that reflected solar radiation

52
00:02:13,110 --> 00:02:10,479
aside from that work kotov also doing

53
00:02:16,390 --> 00:02:13,120
some repair on the russian segment's

54
00:02:18,550 --> 00:02:16,400
water distribution and heating unit

55
00:02:20,150 --> 00:02:18,560
meanwhile sergey ryazanskiy is

56
00:02:23,270 --> 00:02:20,160
continuing some work that he began

57
00:02:24,869 --> 00:02:23,280
yesterday so you can is replacing the

58
00:02:26,309 --> 00:02:24,879
number of fan units throughout the

59
00:02:28,949 --> 00:02:26,319
russian segment

60
00:02:30,390 --> 00:02:28,959
with lower noise models to try and

61
00:02:32,869 --> 00:02:30,400
decrease some of the acoustic loads

62
00:02:34,710 --> 00:02:32,879
these crews are exposed to while inside

63
00:02:36,150 --> 00:02:34,720

the station they'll also be doing some

64

00:02:37,589 --> 00:02:36,160

noise measurements throughout the

65

00:02:40,550 --> 00:02:37,599

russian segment and sending those

66

00:02:43,190 --> 00:02:40,560

results down to the ground

67

00:02:45,509 --> 00:02:43,200

nasa astronaut mike hopkins started off

68

00:02:49,350 --> 00:02:45,519

this day taking a few biological samples

69

00:02:52,150 --> 00:02:49,360

for the pro-k experiment which looks to

70

00:02:53,990 --> 00:02:52,160

track an astronaut's flight diet which

71

00:02:57,110 --> 00:02:54,000

the one that he's on has a decreased

72

00:02:59,589 --> 00:02:57,120

ratio of protein to potassium hoping

73

00:03:01,910 --> 00:02:59,599

that this is potentially one way to lead

74

00:03:04,309 --> 00:03:01,920

to decreased bone loss or loss of bone

75

00:03:05,910 --> 00:03:04,319

mineral material in the astronauts as

76

00:03:07,830 --> 00:03:05,920

that is one of the serious things that

77

00:03:11,190 --> 00:03:07,840

they have to deal with while exposed to

78

00:03:13,670 --> 00:03:11,200

microgravity for long durations of time

79

00:03:15,910 --> 00:03:13,680

hopkins also setting up and running a

80

00:03:18,550 --> 00:03:15,920

few test runs on the capillary flow

81

00:03:20,390 --> 00:03:18,560

experiment fluid physics physics

82

00:03:22,390 --> 00:03:20,400

experiment on board the station that

83

00:03:24,070 --> 00:03:22,400

investigates the force known as

84

00:03:26,550 --> 00:03:24,080

capillary flow

85

00:03:28,309 --> 00:03:26,560

which is used to move fluids through

86

00:03:30,309 --> 00:03:28,319

various containers

87

00:03:32,390 --> 00:03:30,319

results from this study eventually

88

00:03:34,309 --> 00:03:32,400

hoping to improve the

89

00:03:37,830 --> 00:03:34,319

fluid delivery systems onboard

90

00:03:40,550 --> 00:03:37,840

spacecraft in microgravity

91

00:03:42,710 --> 00:03:40,560

things like fuel delivery and also water

92

00:03:45,030 --> 00:03:42,720

systems for astronauts and also for

93

00:03:47,350 --> 00:03:45,040

various experiments on board

94

00:03:48,869 --> 00:03:47,360

hopkins also rounding out his day with a

95

00:03:52,070 --> 00:03:48,879

few health tests

96

00:03:54,229 --> 00:03:52,080

checking out his vision as again vision

97

00:03:56,869 --> 00:03:54,239

one of the another thing affected in

98

00:03:59,030 --> 00:03:56,879

these astronauts and cosmonauts bodies

99

00:04:02,470 --> 00:03:59,040

while in that microgravity environment

100

00:04:06,630 --> 00:04:04,710

russian cosmonaut mikhail turin

101
00:04:08,630 --> 00:04:06,640
right off the bat this morning taking a

102
00:04:10,789 --> 00:04:08,640
few blood and saliva samples for a

103
00:04:12,869 --> 00:04:10,799
russian biological experiment tracking

104
00:04:15,350 --> 00:04:12,879
crew health throughout his increment

105
00:04:17,270 --> 00:04:15,360
and he'll also have a pretty heavy day

106
00:04:18,870 --> 00:04:17,280
loaded down with maintenance

107
00:04:20,229 --> 00:04:18,880
on some of the ventilation systems

108
00:04:22,550 --> 00:04:20,239
throughout the russian segment and also

109
00:04:23,990 --> 00:04:22,560
on the russian electron system which is

110
00:04:26,070 --> 00:04:24,000
uh one of the

111
00:04:28,550 --> 00:04:26,080
oxygen generation systems on board

112
00:04:30,710 --> 00:04:28,560
replenishing the astronauts atmosphere

113
00:04:32,150 --> 00:04:30,720

on board the station

114

00:04:34,390 --> 00:04:32,160

meanwhile nasa astronaut rick

115

00:04:36,310 --> 00:04:34,400

mastracchio taking a few samples of his

116

00:04:37,830 --> 00:04:36,320

own for the human research facility on

117

00:04:39,590 --> 00:04:37,840

board the station

118

00:04:41,830 --> 00:04:39,600

having a few maintenance and house

119

00:04:43,590 --> 00:04:41,840

cleaning tasks himself cleaning out the

120

00:04:45,030 --> 00:04:43,600

ventilation system inside of the destiny

121

00:04:47,110 --> 00:04:45,040

laboratory

122

00:04:48,950 --> 00:04:47,120

and later on today performing a uh the

123

00:04:50,710 --> 00:04:48,960

quarterly inspection of one of the

124

00:04:53,670 --> 00:04:50,720

exercise devices on board the station

125

00:04:55,030 --> 00:04:53,680

the uh the treadmill i used to help

126

00:04:57,030 --> 00:04:55,040

combat the negative effects of

127

00:04:59,110 --> 00:04:57,040

weightlessness that have not only in the

128

00:05:01,670 --> 00:04:59,120

bone mineral like we were talking about

129

00:05:03,270 --> 00:05:01,680

a little bit earlier but also on the

130

00:05:04,790 --> 00:05:03,280

cardiovascular health of these

131

00:05:06,790 --> 00:05:04,800

astronauts

132

00:05:08,790 --> 00:05:06,800

and then the final

133

00:05:10,870 --> 00:05:08,800

crew member on board koichi wakana from

134

00:05:11,909 --> 00:05:10,880

the japanese aerospace exploration

135

00:05:14,070 --> 00:05:11,919

agency

136

00:05:17,510 --> 00:05:14,080

deployed the fourth cubesat earlier this

137

00:05:19,029 --> 00:05:17,520

morning at 1 58 a.m central time

138

00:05:21,670 --> 00:05:19,039

he deployed three yesterday and that

139

00:05:23,990 --> 00:05:21,680

final one today out of the gem airlock

140

00:05:25,510 --> 00:05:24,000

using the space station's portable

141

00:05:27,510 --> 00:05:25,520

satellite deployer

142

00:05:28,469 --> 00:05:27,520

mechanism again all that taking place in

143

00:05:30,629 --> 00:05:28,479

cabo

144

00:05:33,110 --> 00:05:30,639

kibo the japanese module on board the

145

00:05:35,110 --> 00:05:33,120

station so okada was responsible for

146

00:05:36,710 --> 00:05:35,120

getting that together and deploying that

147

00:05:38,870 --> 00:05:36,720

satellite in conjunction with teams on

148

00:05:40,950 --> 00:05:38,880

the ground earlier today

149

00:05:42,790 --> 00:05:40,960

also during his day he'll be doing an

150

00:05:44,710 --> 00:05:42,800

eye exam and working on that capillary

151

00:05:46,469 --> 00:05:44,720

flow experiment with hopkins

152

00:05:48,870 --> 00:05:46,479

again a pretty historic day for the

153

00:05:51,029 --> 00:05:48,880

station marking 15 years since the