Canada

1
00:00:06,309 --> 00:00:03,990
this is mission control houston welcome

2
00:00:09,750 --> 00:00:06,319
to today's iss update it is monday

3
00:00:11,669 --> 00:00:09,760
january 14th 2013. the six-member crew

4
00:00:13,589 --> 00:00:11,679
of expedition 34

5
00:00:15,110 --> 00:00:13,599
is busy today onboard the international

6
00:00:16,470 --> 00:00:15,120
space station with a variety of

7
00:00:19,269 --> 00:00:16,480
different maintenance tasks and also

8
00:00:21,269 --> 00:00:19,279
quite a bit of experiment work going on

9
00:00:22,790 --> 00:00:21,279
today the entire crew

10
00:00:25,029 --> 00:00:22,800
started off their morning today with an

11
00:00:26,470 --> 00:00:25,039
emergency escape drill they do this

12
00:00:29,109 --> 00:00:26,480
periodically throughout their time on

13
00:00:30,870 --> 00:00:29,119

board the orbiting complex

14
00:00:33,229 --> 00:00:30,880
they train for basically three different

15
00:00:35,750 --> 00:00:33,239
major emergencies fire

16
00:00:38,069 --> 00:00:35,760
depressurization and some sort of toxic

17
00:00:39,910 --> 00:00:38,079
release of chemicals or something

18
00:00:41,750 --> 00:00:39,920
today they were practicing exactly what

19
00:00:44,389 --> 00:00:41,760
they would need to do if they need to

20
00:00:45,510 --> 00:00:44,399
crawl into their soyuz vehicles it

21
00:00:47,590 --> 00:00:45,520
brought

22
00:00:49,670 --> 00:00:47,600
the two different three-member teams up

23
00:00:51,670 --> 00:00:49,680
to the space station and evacuate the

24
00:00:52,950 --> 00:00:51,680
complex they spent about three hours

25
00:00:54,790 --> 00:00:52,960
doing that this morning they had a

26
00:00:56,470 --> 00:00:54,800
debrief with the various

27
00:00:58,869 --> 00:00:56,480
ground control teams around the world to

28
00:01:02,150 --> 00:00:58,879
talk about how that drill went and

29
00:01:04,950 --> 00:01:02,160
everything went according to plan

30
00:01:06,630 --> 00:01:04,960
kevin ford and tom marshburn have spent

31
00:01:09,030 --> 00:01:06,640
the rest of their morning replacing the

32
00:01:11,510 --> 00:01:09,040
knee braces inside the columbus

33
00:01:13,670 --> 00:01:11,520
laboratory these basically help the crew

34
00:01:14,950 --> 00:01:13,680
members hold themselves in place as

35
00:01:17,350 --> 00:01:14,960
they're working on different types of

36
00:01:19,190 --> 00:01:17,360
experiments there inside the european

37
00:01:21,350 --> 00:01:19,200
laboratory obviously there's no gravity

38
00:01:23,830 --> 00:01:21,360

up in space so if you push on something

39
00:01:25,270 --> 00:01:23,840
it pushes back on you and you basically

40
00:01:26,870 --> 00:01:25,280
back away from whatever experiment

41
00:01:28,310 --> 00:01:26,880
you're working on so you need to hook

42
00:01:30,710 --> 00:01:28,320
yourselves

43
00:01:32,390 --> 00:01:30,720
into and secure yourself there in the

44
00:01:34,230 --> 00:01:32,400
laboratory so they are going through the

45
00:01:36,230 --> 00:01:34,240
process for replacing

46
00:01:39,109 --> 00:01:36,240
those knee braces that help them while

47
00:01:41,190 --> 00:01:39,119
they're working in that lab

48
00:01:42,789 --> 00:01:41,200
oleg novitskiy is refreshing some of the

49
00:01:44,310 --> 00:01:42,799
software on the computers inside the

50
00:01:45,990 --> 00:01:44,320
russian segment

51
00:01:47,510 --> 00:01:46,000
this is also done periodically just to

52
00:01:50,069 --> 00:01:47,520
keep those computers up and running so

53
00:01:51,910 --> 00:01:50,079
he'll spend his morning doing that

54
00:01:53,590 --> 00:01:51,920
evgeny tarelkin

55
00:01:56,069 --> 00:01:53,600
is continuing to stow some of the cargo

56
00:01:57,990 --> 00:01:56,079
that came up on the progress 48 that

57
00:02:00,389 --> 00:01:58,000
specific cargo vehicle brought up about

58
00:02:02,230 --> 00:02:00,399
two and a half tons of supplies for the

59
00:02:04,630 --> 00:02:02,240
crew so it takes a bit to unload that

60
00:02:06,389 --> 00:02:04,640
progress 48 which is currently on the

61
00:02:07,590 --> 00:02:06,399
bottom side that is the piers docking

62
00:02:09,270 --> 00:02:07,600
compartment on the bottom side of the

63
00:02:11,589 --> 00:02:09,280

russian segment you also see the

64
00:02:13,750 --> 00:02:11,599
progress 49 they are back at the back of

65
00:02:15,350 --> 00:02:13,760
the zvezda service module but the crew

66
00:02:17,270 --> 00:02:15,360
unloads all of that packs it full of

67
00:02:19,270 --> 00:02:17,280
trash and coming up in the next few

68
00:02:21,430 --> 00:02:19,280
weeks those vehicles will be undocked

69
00:02:23,110 --> 00:02:21,440
and burned up in the earth's atmosphere

70
00:02:25,110 --> 00:02:23,120
full of trash that the crew no longer

71
00:02:26,869 --> 00:02:25,120
needs

72
00:02:28,710 --> 00:02:26,879
roman romanenko is working on an

73
00:02:30,869 --> 00:02:28,720
experiment today called the signer ocean

74
00:02:31,670 --> 00:02:30,879
observations this basically takes a look

75
00:02:33,990 --> 00:02:31,680
at

76
00:02:36,150 --> 00:02:34,000
the color contrast of the world's oceans

77
00:02:37,830 --> 00:02:36,160
as the space station flies above they

78
00:02:39,830 --> 00:02:37,840
take photos of those taking a look at

79
00:02:41,910 --> 00:02:39,840
the color of the water and that is

80
00:02:45,350 --> 00:02:41,920
correlated to the fishing industry

81
00:02:47,910 --> 00:02:45,360
taking a look at what kind of water and

82
00:02:50,470 --> 00:02:47,920
biological activity is going on down on

83
00:02:52,630 --> 00:02:50,480
the planet below

84
00:02:55,110 --> 00:02:52,640
tom marshburn is spending his day

85
00:02:56,949 --> 00:02:55,120
working on the capillary flow experiment

86
00:02:59,030 --> 00:02:56,959
this is something that's been ongoing on

87
00:03:00,630 --> 00:02:59,040
board the station basically

88
00:03:01,990 --> 00:03:00,640

up in space obviously there's no gravity

89
00:03:04,470 --> 00:03:02,000
so it's a little bit difficult to

90
00:03:07,030 --> 00:03:04,480
control fluids and things like that

91
00:03:09,190 --> 00:03:07,040
so scientists take a look at capillary

92
00:03:11,750 --> 00:03:09,200
flow which is the interaction of liquid

93
00:03:15,030 --> 00:03:11,760
with a solid you see it here on earth as

94
00:03:17,509 --> 00:03:15,040
a water or the liquid sort of crawls up

95
00:03:19,910 --> 00:03:17,519
glass and other types of materials

96
00:03:21,990 --> 00:03:19,920
scientists take a look at this phenomena

97
00:03:24,710 --> 00:03:22,000
up in space because it is actually not

98
00:03:27,190 --> 00:03:24,720
affected by gravity so as they study

99
00:03:29,430 --> 00:03:27,200
that they can hopefully one day

100
00:03:31,430 --> 00:03:29,440
come up with better designs for

101
00:03:33,270 --> 00:03:31,440
fuel systems onboard spacecraft also

102
00:03:35,830 --> 00:03:33,280
thermal control systems and also waste

103
00:03:37,830 --> 00:03:35,840
water management and other types of

104
00:03:39,270 --> 00:03:37,840
fluids

105
00:03:41,589 --> 00:03:39,280
chris hadfield is working on what's

106
00:03:43,270 --> 00:03:41,599
known as in space 3

107
00:03:45,110 --> 00:03:43,280
this takes a look at different types of

108
00:03:47,910 --> 00:03:45,120
colloids which is basically a solid that

109
00:03:50,949 --> 00:03:47,920
is inside a fluid those colloids tend to

110
00:03:53,910 --> 00:03:50,959
solidify whenever some sort of magnetic

111
00:03:55,670 --> 00:03:53,920
presence or magnet is put up against it

112
00:03:57,429 --> 00:03:55,680
this will help improve designs for

113
00:03:58,630 --> 00:03:57,439

bridges and buildings and things like

114
00:04:00,949 --> 00:03:58,640
that here on earth helping them

115
00:04:03,030 --> 00:04:00,959
withstand earthquakes and other

116
00:04:05,509 --> 00:04:03,040
trauma such as that it also can be used

117
00:04:08,070 --> 00:04:05,519
in automobile designs

118
00:04:10,390 --> 00:04:08,080
but those solids that are inside those

119
00:04:12,390 --> 00:04:10,400
liquids tend to

120
00:04:14,229 --> 00:04:12,400
create sediment or sort of settle out

121
00:04:16,469 --> 00:04:14,239
here on earth but that does not happen

122
00:04:18,469 --> 00:04:16,479
up in space since there is no gravity so

123
00:04:21,030 --> 00:04:18,479
they study that to help improve the

124
00:04:23,270 --> 00:04:21,040
designs here on earth

125
00:04:25,990 --> 00:04:23,280
and finally today work began on what is

126
00:04:29,350 --> 00:04:26,000
known as the rrm this is the robotics

127
00:04:30,790 --> 00:04:29,360
refueling mission this will be ongoing

128
00:04:32,870 --> 00:04:30,800
throughout the week it is being

129
00:04:34,710 --> 00:04:32,880
controlled by the ground teams here in

130
00:04:36,790 --> 00:04:34,720
houston and also the canadian space

131
00:04:39,350 --> 00:04:36,800
agency this activity is actually taking

132
00:04:41,830 --> 00:04:39,360
place out on what is called elc-4 that

133
00:04:43,830 --> 00:04:41,840
is express logistics carrier number four

134
00:04:45,430 --> 00:04:43,840
that is out on the right hand side of

135
00:04:47,990 --> 00:04:45,440
the space station basically directly

136
00:04:50,790 --> 00:04:48,000
below the alpha magnetic spectrometer

137
00:04:52,629 --> 00:04:50,800
this is a live view of dexter which is

138
00:04:55,670 --> 00:04:52,639

one of the robots on board the space

139
00:04:58,230 --> 00:04:55,680
station and its arms operating on this

140
00:05:02,870 --> 00:04:58,240
activity board that is known as rrm it

141
00:05:05,749 --> 00:05:04,070
but what they're trying to do is

142
00:05:07,670 --> 00:05:05,759
demonstrate how you would refuel a

143
00:05:09,830 --> 00:05:07,680
satellite up in orbit whenever you

144
00:05:11,590 --> 00:05:09,840
launch a satellite its life span is

145
00:05:13,990 --> 00:05:11,600
determined by not only how long the

146
00:05:15,749 --> 00:05:14,000
components last but also how long the

147
00:05:17,830 --> 00:05:15,759
fuel on board lasts since you can't

148
00:05:18,710 --> 00:05:17,840
really refuel the satellites in present

149
00:05:20,950 --> 00:05:18,720
day

150
00:05:23,029 --> 00:05:20,960
but this activity board is going to put

151
00:05:25,590 --> 00:05:23,039
dexter through a series of operations to

152
00:05:28,390 --> 00:05:25,600
snip some wires unscrew some caps and

153
00:05:30,230 --> 00:05:28,400
also transfer some simulated fuel

154
00:05:32,070 --> 00:05:30,240
later on this week so dexter will

155
00:05:34,469 --> 00:05:32,080
demonstrate not only how you would

156
00:05:35,990 --> 00:05:34,479
refuel a satellite that is designed for

157
00:05:36,950 --> 00:05:36,000
that to happen but also how you would

158
00:05:38,469 --> 00:05:36,960
actually go up to one of these

159
00:05:40,550 --> 00:05:38,479
satellites that was never designed to do

160
00:05:42,469 --> 00:05:40,560
that snip these wires uncapped this

161
00:05:44,230 --> 00:05:42,479
thing and also try to refuel it so

162
00:05:45,590 --> 00:05:44,240
dexter will be going through the paces

163
00:05:47,270 --> 00:05:45,600

of that later on this week the ground

164
00:05:49,430 --> 00:05:47,280
teams here in houston are monitoring

165
00:05:51,830 --> 00:05:49,440
that as well as the canadian space

166
00:05:54,469 --> 00:05:51,840
agency which obviously built the space

167
00:05:55,990 --> 00:05:54,479
station arm and also dexter itself so

168
00:05:57,350 --> 00:05:56,000
that activity will continue throughout