



**PAVEL
VINOGRAOV**
EXPEDITION 35 FLIGHT ENGINEER

1
00:00:00,506 --> 00:00:07,546
[Music]

2
00:00:08,046 --> 00:00:08,626
>> Josh Byerly: [Background
Music] Good morning everybody,

3
00:00:08,626 --> 00:00:09,476
welcome to Space Station Live.

4
00:00:09,476 --> 00:00:11,996
It is Tuesday, May 7, 2013.

5
00:00:11,996 --> 00:00:14,786
This is a live shot inside the
international space station

6
00:00:14,856 --> 00:00:17,576
flight control room here at
the Johnson Space Center.

7
00:00:17,576 --> 00:00:19,326
This team has been
very busy today working

8
00:00:19,326 --> 00:00:22,876
with the Expedition 35 crew
onboard the International

9
00:00:22,876 --> 00:00:23,846
Space Station.

10
00:00:24,616 --> 00:00:27,556
Currently onboard, Chris
Hadfield, Roman Romanenko

11
00:00:27,556 --> 00:00:29,776
and Tom Marshburn are in
their final days aboard the

12
00:00:29,776 --> 00:00:30,746
orbiting complex.

13
00:00:30,746 --> 00:00:35,306
They completed the second
of two test out procedures

14
00:00:35,306 --> 00:00:37,296
for the Soyuz that will
soon bring them home.

15
00:00:37,296 --> 00:00:38,986
This is going to
be the Soyuz 33.

16
00:00:39,446 --> 00:00:42,606
It's the same vehicle that
launched them back in December

17
00:00:42,606 --> 00:00:44,826
of 2012 that's going to
be bringing them home.

18
00:00:44,826 --> 00:00:46,456
You see the current
layout of the station there

19
00:00:46,456 --> 00:00:47,456
with the Soyuz 33

20
00:00:47,456 --> 00:00:48,516
on the Rostvedt [Assumed
spelling] module

21
00:00:48,996 --> 00:00:50,596
that is pointing
down towards Earth.

22

00:00:50,596 --> 00:00:54,486
You'll see the Progresses
50 and 51 back at the back

23
00:00:54,486 --> 00:00:58,806
and the Soyuz 34 up on
top of the Poisk module.

24
00:00:58,806 --> 00:01:00,426
That is the vehicle that
brought up Chris Cassidy,

25
00:01:00,426 --> 00:01:04,506
Alexander Misurkin and
Pavel Vinogradov in March.

26
00:01:04,506 --> 00:01:06,276
But everything went
according to plan.

27
00:01:06,586 --> 00:01:09,236
The crew is also going to be
packing up some items today

28
00:01:09,236 --> 00:01:12,606
and tomorrow, just getting
ready for the return home

29
00:01:12,606 --> 00:01:14,546
after five months in space.

30
00:01:14,546 --> 00:01:15,766
Chris Hadfield also working

31
00:01:15,766 --> 00:01:18,266
on an experiment
today called NightPod.

32
00:01:18,386 --> 00:01:21,636
This is one of the cameras

onboard that takes pictures

33

00:01:22,056 --> 00:01:24,916
of the Earth below which, of
course, most people have seen.

34

00:01:25,266 --> 00:01:27,336
And NightPod does pretty
much what it sounds like.

35

00:01:27,336 --> 00:01:33,396
It helps the crew take photos of
nighttime cities and other items

36

00:01:33,396 --> 00:01:34,486
down on the planet below.

37

00:01:34,486 --> 00:01:37,156
It's a little bit hard to take
night pictures onboard the

38

00:01:37,156 --> 00:01:38,416
International Space Station

39

00:01:38,416 --> 00:01:41,396
because of how fast the
orbiting complex is traveling

40

00:01:41,496 --> 00:01:45,716
at 17,500 miles an hour
motion blur is a pretty

41

00:01:45,716 --> 00:01:46,756
significant issue.

42

00:01:46,756 --> 00:01:49,826
So, this is basically a
high-tech motorized tripod

43

00:01:49,826 --> 00:01:53,466
and that the crew mounted a
camera on and it takes care

44

00:01:53,466 --> 00:01:56,956
of that motion blur and takes
fairly crisp pictures of cities

45

00:01:56,956 --> 00:01:58,566
and other items down below.

46

00:01:58,566 --> 00:02:01,196
So, that NightPod has
undergone a software update

47

00:02:01,596 --> 00:02:04,166
and Chris Hadfield has
been taking it out today.

48

00:02:05,326 --> 00:02:08,196
Pavel Vinogradov and Alexander
Misurkin have been busy

49

00:02:08,196 --> 00:02:11,326
since yesterday unpacking
the Progress 51 vehicle

50

00:02:11,326 --> 00:02:13,966
as we mentioned is at the
back of the Russian segment

51

00:02:14,346 --> 00:02:15,746
of the International
Space Station.

52

00:02:15,746 --> 00:02:18,396
That is the Zvezda Service
Module and it brought up more

53

00:02:18,396 --> 00:02:20,056

than two tons of
supplies for the crew.

54

00:02:20,056 --> 00:02:23,366

So, they're going to be busy
unpacking that and keeping

55

00:02:23,366 --> 00:02:25,606

up with the inventory
management system, which is sort

56

00:02:25,606 --> 00:02:29,416

of the checklist of items that
are coming across the hatchway

57

00:02:29,416 --> 00:02:30,256

and where they're stored.

58

00:02:31,756 --> 00:02:35,066

Vinogradov also has a physical
fitness evaluation later

59

00:02:35,066 --> 00:02:37,786

on today on the treadmill that's
back in the Russian segment.

60

00:02:37,786 --> 00:02:39,086

They do that from
time to time just

61

00:02:39,086 --> 00:02:41,656

to monitor the crew's
health and he is also going

62

00:02:41,656 --> 00:02:44,476

to be collecting some surface
samples from some cabling

63

00:02:44,476 --> 00:02:47,276

and other elements that are

inside the Zayra module,

64

00:02:47,276 --> 00:02:48,596

also part of the
Russian segment.

65

00:02:48,936 --> 00:02:50,636

They swabbed those
surfaces just to make sure

66

00:02:50,636 --> 00:02:53,596

that they're staying clean,
that there's no bacteria growing

67

00:02:53,596 --> 00:02:57,486

up there and that everything
is comfy and ready for the crew

68

00:02:57,486 --> 00:02:59,346

to continue living
onboard the space station.

69

00:03:00,976 --> 00:03:03,126

Chris Cassidy has been
busy this morning working

70

00:03:03,126 --> 00:03:04,786

on Robonaut getting it set back

71

00:03:04,786 --> 00:03:07,496

up for some operational
activities that will take place.

72

00:03:07,686 --> 00:03:09,876

Here you see footage
from earlier today as he

73

00:03:10,386 --> 00:03:12,936

and Tom Marshburn back
behind him assembled

74

00:03:13,266 --> 00:03:14,936

that robot that's
on the station.

75

00:03:15,476 --> 00:03:18,766

Typically that robot is
controlled by ground commands

76

00:03:18,766 --> 00:03:21,076

from here in Houston
while the crew monitors.

77

00:03:21,116 --> 00:03:22,836

There's some activities
coming up later

78

00:03:22,836 --> 00:03:24,496

on this week for Robonaut.

79

00:03:24,846 --> 00:03:26,116

Cassidy is also going
to be working

80

00:03:26,116 --> 00:03:28,956

on the Capillary Flow experiment
today that takes a look

81

00:03:28,956 --> 00:03:32,856

at how fluids behave and the
capillary flow phenomenon

82

00:03:33,186 --> 00:03:36,316

up in space compares it to
what people see down on Earth.

83

00:03:36,686 --> 00:03:40,966

But the goal is for future human
space flying for better fluid

84

00:03:40,966 --> 00:03:43,846

and fuel systems in spacecraft that will be built

85

00:03:43,846 --> 00:03:46,906

in the future, more efficient ways to transfer fuel

86

00:03:47,006 --> 00:03:50,336

in those spacecrafts and also it could have some impacts

87

00:03:50,336 --> 00:03:52,166

on water recycling systems

88

00:03:52,456 --> 00:03:54,506

like you find onboard the International Space Station.

89

00:03:54,506 --> 00:03:56,626

It's going to be pretty critical as we look

90

00:03:56,626 --> 00:03:59,146

to journeys beyond the Earth orbit and going on to Mars

91

00:03:59,146 --> 00:04:01,066

and to asteroids and places such as that.

92

00:04:02,006 --> 00:04:05,376

That Capillary Flow Experiment the principle investigators

93

00:04:05,376 --> 00:04:07,186

behind are Portland State University

94

00:04:07,576 --> 00:04:09,286
and the Purdue University.

95

00:04:09,866 --> 00:04:12,216
Tom Marshburn also is
we talked about helping

96

00:04:12,216 --> 00:04:13,746
out Chris Cassidy
today with a variety

97

00:04:13,746 --> 00:04:15,726
of activities including
Robonaut, like you just saw.

98

00:04:16,066 --> 00:04:18,616
He's also going through
some departure preparations.

99

00:04:18,616 --> 00:04:20,266
There's quite a lengthy
list of items

100

00:04:20,266 --> 00:04:22,476
that the crew has to pack up.

101

00:04:22,516 --> 00:04:26,776
So he is today as well as Chris
Hadfield and Roman Romanenko,

102

00:04:26,776 --> 00:04:29,196
they started their
process yesterday.

103

00:04:29,636 --> 00:04:32,776
Also, later on in the
early morning hours

104

00:04:32,776 --> 00:04:34,826
of tomorrow morning the

space station is going

105

00:04:34,826 --> 00:04:35,896
to be reboosted.

106

00:04:36,186 --> 00:04:38,616
That Progress 51 that we
talked about at the back end

107

00:04:38,616 --> 00:04:40,166
of the station will
fire its thrusters

108

00:04:40,166 --> 00:04:42,906
at 1:51 a.m. Central Time.

109

00:04:43,416 --> 00:04:45,866
It'll last for 14
minutes and 18 seconds.

110

00:04:46,206 --> 00:04:47,456
This is going to
set up the station

111

00:04:47,456 --> 00:04:50,136
for the upcoming undocking
and also the launch

112

00:04:50,506 --> 00:04:53,876
of Fyodor Yurchikhin, Luca
Parmitano and Karen Nyberg,

113

00:04:53,876 --> 00:04:56,136
so the space station
just getting positioned

114

00:04:56,136 --> 00:04:57,996
for all these upcoming
activities.

115

00:04:58,346 --> 00:05:01,976

At the end of that the
station's orbit will be 258.7

116

00:05:02,296 --> 00:05:05,166

by 255.4 statute miles.

117

00:05:05,166 --> 00:05:09,086

And finally today, the crew has
several different crew Earth

118

00:05:09,086 --> 00:05:11,136

observation opportunities
for them to take a look

119

00:05:11,136 --> 00:05:14,106

down at the planet below to take
some photos if they have time.

120

00:05:14,506 --> 00:05:16,676

There's some flooding
taking place in Saudi Arabia

121

00:05:16,676 --> 00:05:18,246

that they're going to be
flying over, so they'll try

122

00:05:18,246 --> 00:05:19,296

to get pictures of that.

123

00:05:19,776 --> 00:05:23,326

There's also an impact crater
in Libya that's fairly unusual

124

00:05:23,326 --> 00:05:25,446

because its only about
2 kilometers wide,

125

00:05:25,446 --> 00:05:26,966

which sounds fairly wide,

126

00:05:26,966 --> 00:05:29,406

but for an impact crater it's
really not all that large.

127

00:05:29,786 --> 00:05:32,216

But more importantly than that
it's actually not all that old.

128

00:05:32,216 --> 00:05:35,066

So, it's actually 120
million years old,

129

00:05:35,066 --> 00:05:37,336

which is fairly young
for an impact crater.

130

00:05:38,116 --> 00:05:39,816

In comparison to this
they're going to be flying

131

00:05:39,816 --> 00:05:41,026

over another one of these,

132

00:05:41,026 --> 00:05:43,236

which is called the
West Hawk Impact Crater

133

00:05:43,596 --> 00:05:44,886

in Manitoba, Canada.

134

00:05:45,166 --> 00:05:46,566

This is just to the
north of lake--

135

00:05:46,566 --> 00:05:50,586

over the woods up there on the
border over the U.S. and Canada.

136

00:05:51,036 --> 00:05:52,996

This one is 4.5 kilometers wide,

137

00:05:52,996 --> 00:05:57,436

so it's quite a significant
more larger size and it's

138

00:05:57,436 --> 00:06:00,176

about 350 million years old.

139

00:06:00,176 --> 00:06:02,046

So, if you would like
to take a look at any