



1
00:00:03,400 --> 00:00:05,560
Good day, this is mission control Houston.

2
00:00:05,560 --> 00:00:09,680
We are now looking at a live view inside the
International Space Station flight control room

3
00:00:09,680 --> 00:00:12,500
at the Christopher C. Kraft
Mission Control Center

4
00:00:12,500 --> 00:00:17,050
where the team seen here has been monitoring
the systems aboard the station, following along

5
00:00:17,050 --> 00:00:21,950
and supporting the busy activities
of the Expedition 30 crew members.

6
00:00:21,950 --> 00:00:26,170
Leading the Orbit 2 Team here in the station
flight control room today is Flight Director Ed

7
00:00:26,170 --> 00:00:30,380
Van Cise seen in this view on the
right-hand side of your screen,

8
00:00:30,380 --> 00:00:34,530
along with astronaut Jack Fisher
next to him, serving as Capcom,

9
00:00:34,530 --> 00:00:38,370
relaying all ground messages up to the crew.

10
00:00:38,370 --> 00:00:43,440
Aboard the orbiting complex, the Expedition 30
crew is wrapping up what has been a full week

11
00:00:43,440 --> 00:00:47,450

of scientific research, maintenance of critical systems aboard the station,

12

00:00:47,450 --> 00:00:51,640

interacting with students and the public by answer questions of inquiring minds

13

00:00:51,640 --> 00:00:55,410

and at the heart of their activities this week preparations for a venture outdoors

14

00:00:55,410 --> 00:00:58,550

in a spacewalk planned for next week.

15

00:00:58,550 --> 00:01:03,790

NASA astronaut and commander of the complex Dan Burbank, there on the left-hand side,

16

00:01:03,790 --> 00:01:08,210

with flight engineers and cosmonauts Anton Shkaplerov and Anatoly Ivanishin,

17

00:01:08,210 --> 00:01:13,950

along with NASA astronaut, on the right-hand side, Don Pettit, cosmonaut Oleg Kononenko

18

00:01:13,950 --> 00:01:17,870

and European Space Agency astronaut Andre Kuipers are coming

19

00:01:17,870 --> 00:01:22,230

to a close of week 11 of Expedition 30.

20

00:01:22,230 --> 00:01:27,060

Commander Burbank, Shkaplerov and Ivanishin now log 90 days in space as of today,

21

00:01:27,060 --> 00:01:29,680

while their Expedition 30 crewmates Pettit,

22

00:01:29,680 --> 00:01:33,890

Kononenko and Kuipers will close out today with 52 days in space.

23

00:01:33,890 --> 00:01:39,320

And now for a look at this week in space.

24

00:01:39,320 --> 00:01:44,580

On Monday, Expedition 30 Commander Dan Burbank had removed a filter tank assembly

25

00:01:44,580 --> 00:01:49,300

of the Advanced Recycle System so it can be restored to its regular configuration to work

26

00:01:49,300 --> 00:01:53,120

in concert with the Urine Processing Assembly, or UPA,

27

00:01:53,120 --> 00:01:55,510

part of the station's water recovery system.

28

00:01:55,510 --> 00:02:01,250

The UPA distills urine, that is then converted to potable water and oxygen.

29

00:02:01,250 --> 00:02:03,360

Also on Monday, Oleg Kononenko

30

00:02:03,360 --> 00:02:09,180

and Anton Shkaplerov reviewed timeline procedures for their February 16 spacewalk.

31

00:02:09,180 --> 00:02:12,710

During that six-hour excursion, the two cosmonauts will move one

32

00:02:12,710 --> 00:02:17,600

of two Strela hand-operated cranes from the

Pirs docking compartment to the Poisk module,

33

00:02:17,600 --> 00:02:22,920
and also install five debris shields
on the Zvezda service module.

34

00:02:22,920 --> 00:02:28,270
Meanwhile, Don Pettit worked to reset a
video overlay display for the Smoke Point

35

00:02:28,270 --> 00:02:31,150
In Co-flow Experiment, also known as SLICE.

36

00:02:31,150 --> 00:02:37,150
The experiment determines the point at which gas
jet planes begin to emit soot in microgravity.

37

00:02:37,150 --> 00:02:41,980
Studying a soot emitting flame is important in
understanding the ability of fires to spread.

38

00:02:41,980 --> 00:02:48,420
And also Flight Engineer Andre Kuipers set the
Portable Pulmonary Function System in advance

39

00:02:48,420 --> 00:02:51,480
of the session of the VO₂max experiment.

40

00:02:51,480 --> 00:02:58,800
VO₂max observes the aerobic capacity of an
individual on a long-duration space mission,

41

00:02:58,800 --> 00:03:03,550
and by understanding the changes in aerobic
capacity that occur within spaceflight,

42

00:03:03,550 --> 00:03:08,150
necessary adjustments can be made to
spacewalk exercise countermeasures.

43
00:03:09,590 --> 00:03:15,240
Tuesday marked a busy day for the ISS
International Space Station Expedition 30 crew

44
00:03:15,240 --> 00:03:20,580
as cosmonauts and astronauts work together to
prepare for the upcoming Russian spacewalk.

45
00:03:20,580 --> 00:03:24,160
Shkaplerov and Kononenko spent most
of their day on Tuesday activating

46
00:03:24,160 --> 00:03:29,320
and inspecting the Russian Orlan spacesuits
they would don for their spacewalk.

47
00:03:29,320 --> 00:03:34,000
While Commander Dan Burbank lent a hand in that
preparation efforts as he configured a pair

48
00:03:34,000 --> 00:03:36,600
of cameras for use during the spacewalk.

49
00:03:36,600 --> 00:03:39,770
He then transferred those cameras
along with additional spacewalk tools

50
00:03:39,770 --> 00:03:42,130
to the Russian segment of the station.

51
00:03:42,130 --> 00:03:46,050
Afterward he provided a tutorial to
Shkaplerov and Kononenko on the use

52
00:03:46,050 --> 00:03:52,020
of the dynamic onboard ubiquitous graphics
software which is a 3-D virtual simulation tool

53
00:03:52,020 --> 00:03:55,330

that is used for robotics
and spacewalk planning.

54
00:03:55,330 --> 00:04:00,110
Burbank also had stowed the filter tank assembly
that he removed on Monday's reconfiguration

55
00:04:00,110 --> 00:04:03,270
of the Water Recovery System and
also performed some maintenance

56
00:04:03,270 --> 00:04:06,530
to the Waste and Hygiene Compartment.

57
00:04:07,660 --> 00:04:11,080
On Tuesday, Flight Engineer Don
Pettit installed expansion ports

58
00:04:11,080 --> 00:04:13,970
on three bowling ball free
flying satellites known

59
00:04:13,970 --> 00:04:21,400
as Synchronized Position Hold Engage
Reorient Experimental Satellites, or SPERES.

60
00:04:21,400 --> 00:04:26,920
Those are used to test techniques that could
lead to advancements in automated dockings,

61
00:04:26,920 --> 00:04:31,470
satellite servicing, spaceflight
assembly and emergency repairs.

62
00:04:31,470 --> 00:04:38,890
Pettit later worked with the Capillary Flow
Experiment , shown here, that takes a close look

63
00:04:38,890 --> 00:04:43,280
at how fluids move up surfaces

in a weightless environment.

64

00:04:43,280 --> 00:04:46,170

Results from that experiment
will improve computer models used

65

00:04:46,170 --> 00:04:52,470

to design fluid transfer systems
and fuel tanks on future spacecraft.

66

00:04:52,470 --> 00:04:57,060

On Wednesday, Flight Engineers Anton
Shkaplerov and Oleg Kononenko continued

67

00:04:57,060 --> 00:05:02,070

with more spacewalk prep, with a checkout
of their spacesuits and hardware and tools.

68

00:05:02,070 --> 00:05:07,120

Commander Burbank and Flight Engineer Don
Pettit had tested a communications unit

69

00:05:07,120 --> 00:05:11,870

that will assist with rendezvous and
capture the SpaceX Dragon capsule.

70

00:05:11,870 --> 00:05:14,360

This is the first planned
commercial cargo vehicle mission

71

00:05:14,360 --> 00:05:17,170

to the International Space Station.

72

00:05:18,710 --> 00:05:24,250

Also on Wednesday, Commander Burbank and
Don Pettit took some time out just before

73

00:05:25,610 --> 00:05:28,470

to answer YouTube questions from the public.

74

00:05:28,470 --> 00:05:34,450

Prepare answered questions like how a helium filled balloon floats in space,

75

00:05:34,450 --> 00:05:38,240

also on Earth observations of the planet's natural changes.

76

00:05:38,240 --> 00:05:43,790

Flight Engineer Andre Kuipers joined Burbank in that collecting the blood

77

00:05:43,790 --> 00:05:45,890

and urine samples for the SOLO experiment.

78

00:05:45,890 --> 00:05:50,470

This is the Sodium Loading in Microgravity that observes a crew members' fluid

79

00:05:50,470 --> 00:05:54,320

and salt retention and how it affects body mass.

80

00:05:55,420 --> 00:05:58,510

On Wednesday, Commander Burbank also continued work

81

00:05:58,510 --> 00:06:02,700

on the Binary Colloidal Alloy Test 6, or BCAT-6.

82

00:06:02,700 --> 00:06:07,260

That study observes how microscopic particles interact with liquid crystals,

83

00:06:07,260 --> 00:06:12,660

as results can also lead to let the design of new materials with molecular precision.

84

00:06:12,660 --> 00:06:17,780

And Flight Engineer Anatoly

Ivanishin had conducted work

85

00:06:17,780 --> 00:06:21,690

with the Russian Earth observation study called Uragan, or hurricane.

86

00:06:21,690 --> 00:06:25,850

The experiment observes changes on Earth and seeks to predict the effects

87

00:06:25,850 --> 00:06:29,160

of both man-made and natural disasters.

88

00:06:30,440 --> 00:06:35,030

Also on Wednesday, the six crew members aboard the International Space Station reviewed a new

89

00:06:35,030 --> 00:06:41,010

respirator purge technique for their emergency mask and onboard training.

90

00:06:43,510 --> 00:06:46,240

On Thursday, spacewalk preparations continued

91

00:06:46,240 --> 00:06:49,720

to take center stage for Expedition 30 crew members.

92

00:06:49,720 --> 00:06:54,340

Flight Engineers Oleg Kononenko and Anton Shkaplerov tested the communication systems

93

00:06:54,340 --> 00:06:59,310

and biomedical sensor systems of their Russian Orlan spacesuits.

94

00:07:00,690 --> 00:07:04,770

Flight Engineer Anatoly Ivanishin and Shkaplerov then installed the hatch mechanism

95
00:07:04,770 --> 00:07:10,290
to Progress 46 cargo ship that was currently
docked to the Pirs docking compartment.

96
00:07:10,290 --> 00:07:15,040
The Hatch to the cargo ship was closed
today to accommodate the upcoming spacewalk

97
00:07:15,040 --> 00:07:21,730
which will begin in the Pirs
docking compartment airlock.

98
00:07:21,730 --> 00:07:25,410
Commander Dan Burbank yesterday worked
in the Kibo module on the removal

99
00:07:25,410 --> 00:07:30,140
of the data multiplexer from the inter-
communication system rack that is set

100
00:07:30,140 --> 00:07:34,450
for return aboard the SpaceX Dragon spacecraft.

101
00:07:34,450 --> 00:07:39,940
Burbank was later joined by Flight Engineer
Andre Kuipers for some maintenance work

102
00:07:39,940 --> 00:07:45,240
on the Total Organic Carbon Analyzer which is
necessary for checking drinking water quality.

103
00:07:45,240 --> 00:07:51,390
On Thursday Flight Engineer Don Pettit
installed hardware for a combustion experiment

104
00:07:51,390 --> 00:07:54,120
in the microgravity science glovebox.

105
00:07:54,120 --> 00:07:58,740

The Structure and Liftoff and Combustion Experiment, or SLICE, investigates the nature

106

00:07:58,740 --> 00:08:03,210

of flames in microgravity and could lead to improvements in technologies aimed

107

00:08:03,210 --> 00:08:08,680

at reducing pollution and improving burning efficiency for a wide variety of industries.

108

00:08:10,320 --> 00:08:15,040

And wrapping up the week today Friday, February 10, spacewalk preparations continued

109

00:08:15,040 --> 00:08:18,640

to take center stage for Expedition 30 crew members in advance

110

00:08:18,640 --> 00:08:21,490

of next week six-hour spacewalk outside the complex.

111

00:08:21,490 --> 00:08:26,600

The crew has closed the hatches to, and also performed a hatch leak

112

00:08:26,600 --> 00:08:31,840

of the Progress 46 cargo ship currently docked to the Pirs docking compartment.

113

00:08:31,840 --> 00:08:34,840

That was to accommodate the spacewalk that will begin

114

00:08:34,840 --> 00:08:38,790

from that Pirs docking compartment airlock.

115

00:08:38,790 --> 00:08:43,730

Today, station commander Dan Burbank

conducted a valve motor checkout evaluation

116

00:08:43,730 --> 00:08:45,220

of the onboard Amine Swingbed.

117

00:08:45,220 --> 00:08:49,950

The Amine Swingbed is being tested aboard the station to one day serve as a system

118

00:08:49,950 --> 00:08:52,680

that removes carbon dioxide and moisture

119

00:08:52,680 --> 00:08:58,510

from the air providing the crew breathable air supply.

120

00:08:58,510 --> 00:09:01,730

Anatoly Ivanishin spent some time in the Russian segment

121

00:09:01,730 --> 00:09:06,130

of the house performing preventative maintenance to the service module's ventilation system,

122

00:09:06,130 --> 00:09:09,980

testing the filter replacement and cleaning in the Rassvet module.

123

00:09:09,980 --> 00:09:14,140

Flight Engineer Don Pettit swapped out a remote sensor unit

124

00:09:14,140 --> 00:09:18,170

of the service module's internal wireless integrated system to troubleshoot

125

00:09:18,170 --> 00:09:20,370

and recover a channel of that system.

126

00:09:20,370 --> 00:09:25,740

He also reconfigured one of the onboard Minus Eighty-degree Laboratory Freezer that is used

127

00:09:25,740 --> 00:09:30,000

to store biological and science samples that require refrigeration

128

00:09:30,000 --> 00:09:32,530

until returned to Earth for analysis.

129

00:09:32,530 --> 00:09:39,040

Flight Engineer Kuipers performed maintenance to the onboard Water Recovery System.

130

00:09:39,040 --> 00:09:42,360

That Water Recovery System stores urine and condensation and converts it

131

00:09:42,360 --> 00:09:45,430

into consumable water for the crew aboard the space station.

132

00:09:45,430 --> 00:09:49,820

The crew will then round-out their day today

133

00:09:49,820 --> 00:09:53,590

with a regular daily planning conference before entering its pre-sleep period

134

00:09:53,590 --> 00:09:55,450

to kick off their weekend.

135

00:09:55,450 --> 00:10:00,040

That concludes week 11 of Expedition 30 aboard the International Space Station.