



1
00:00:00,996 --> 00:00:03,556
Good day and Happy Holidays
from Mission Control Houston.

2
00:00:04,126 --> 00:00:07,376
There's been no slowing down in
space despite the upcoming holidays.

3
00:00:07,376 --> 00:00:12,256
It's been a busy week here in Mission Control
and also aboard the International Space Station.

4
00:00:13,096 --> 00:00:16,466
On Monday, the Soyuz TMA-03M spacecraft,

5
00:00:16,696 --> 00:00:21,476
that would carry new Expedition 30 Flight
Engineers Oleg Kononenko, Don Pettit

6
00:00:21,606 --> 00:00:27,156
and Andre Kuipers in to space, rolled out to the
launch pad at Baikonur Cosmodrome in Kazakhstan

7
00:00:27,156 --> 00:00:28,926
in preparation of Wednesday's launch.

8
00:00:29,386 --> 00:00:33,286
Aboard the station, Expedition 30
Commander Dan Burbank had worked

9
00:00:33,286 --> 00:00:37,606
with the Biomechanical Analysis of Treadmill
Exercise on the International Space Station,

10
00:00:37,996 --> 00:00:40,496
or Treadmill Kinematics experiment.

11
00:00:40,496 --> 00:00:42,016
Burbank also continued his work

12

00:00:42,016 --> 00:00:47,876

with the Preliminary Advanced Colloids Experiment-2, also known as PACE-2.

13

00:00:47,876 --> 00:00:51,676

Housed in the Fluids Integrated Rack, PACE-2 studies the effects of vibration

14

00:00:51,676 --> 00:00:55,186

on particles suspended in fluids in the space environment.

15

00:00:55,546 --> 00:00:59,336

This work aids in the development and optimization of crew procedures

16

00:00:59,336 --> 00:01:04,756

for the future Advanced Colloids Experiment, also known as ACE, which will fly samples

17

00:01:04,966 --> 00:01:10,276

that may have an important impact on our understanding of fundamental physics.

18

00:01:10,276 --> 00:01:15,696

Additionally on Monday, he updated software for the Sodium Loading in Microgravity experiment.

19

00:01:16,136 --> 00:01:19,706

SOLO researches the ways in which the human body retains fluid

20

00:01:19,706 --> 00:01:23,126

and salt during bed rest and space flight.

21

00:01:23,786 --> 00:01:26,136

Subject crew members follow a diet of constant low

22

00:01:26,136 --> 00:01:28,986

or normal sodium intake in
increased fluid consumption.

23

00:01:30,026 --> 00:01:33,976

Also on Monday, Flight Engineer Anton
Shkaplerov worked on the Seiner experiment.

24

00:01:34,306 --> 00:01:39,656

This is a Russian experiment that examines the
oceans below, documents their characteristics

25

00:01:39,656 --> 00:01:42,486

and then correlates that to
certain bioproductive areas

26

00:01:42,486 --> 00:01:44,116

that impact the fishing industry.

27

00:01:44,666 --> 00:01:49,356

Shkaplerov and Flight Engineer Anatoly Ivanishin
then worked to replace several of the panels,

28

00:01:49,436 --> 00:01:52,266

fuses and batteries inside
the complex's Russian segment.

29

00:01:52,966 --> 00:01:58,056

Then on Tuesday, Burbank spent most of his
day working on the Combustion Integrated Rack,

30

00:01:58,396 --> 00:02:02,836

which can safely accommodate experiments
that examine droplet, solid fuel

31

00:02:02,836 --> 00:02:06,916

and gaseous fuel combustion
in a weightless environment.

32

00:02:07,126 --> 00:02:12,816

The commander replaced a fuel reservoir and radiometer in the rack in preparation for start

33

00:02:12,816 --> 00:02:15,256

of the Flame Extinguishment experiment.

34

00:02:15,716 --> 00:02:20,086

Results from this experiment, also known as FLEX-2, will improve fire safety designs

35

00:02:20,416 --> 00:02:25,966

for future spacecraft and aid in the control of combustion generated pollution on Earth.

36

00:02:26,506 --> 00:02:30,996

Also on Tuesday working in the Russian segment of the station, Shapklerov routed cables

37

00:02:30,996 --> 00:02:34,616

for an antenna switching controller and installed a space-to-space radio.

38

00:02:35,026 --> 00:02:38,266

Meanwhile, Ivanishin conducted troubleshooting on the ethernet connection

39

00:02:38,266 --> 00:02:40,636

of a station support computer to prepare it

40

00:02:40,636 --> 00:02:44,256

for downlinking video of the Soyuz docking on Friday.

41

00:02:44,256 --> 00:02:45,806

Then on Wednesday...

42

00:02:45,806 --> 00:02:50,776

[Rocket launching]

43

00:02:50,786 --> 00:02:53,496

...three new Expedition

30 crew members began their voyage

44

00:02:53,636 --> 00:02:55,016

to the International Space Station.

45

00:02:55,506 --> 00:03:00,246

Flight Engineers Oleg Kononenko, Don Pettit
and Andre Kuipers launched on Wednesday

46

00:03:00,376 --> 00:03:05,196

at 7:16 a.m. Central time aboard
their Soyuz TMA-03M spacecraft

47

00:03:05,356 --> 00:03:07,546

from Baikonur Cosmodrome, Kazakhstan.

48

00:03:07,836 --> 00:03:13,626

On Wednesday, Burbank worked on a laptop
computer to convert the Russian video signals

49

00:03:13,626 --> 00:03:18,616

of Friday's docking for downlink and
streaming using the American Ku-band radar.

50

00:03:18,876 --> 00:03:21,706

The commander also spent a good portion

51

00:03:21,706 --> 00:03:25,636

of his day scrubbing cooling
loops in the U.S. spaceuits.

52

00:03:25,846 --> 00:03:31,186

The scrubbing cleans out dust and
microorganisms that may accumulate

53

00:03:31,186 --> 00:03:34,046

over time in the water cooling loops.

54

00:03:34,116 --> 00:03:38,986

And also on Wednesday, Shkaplerov and Ivanishin worked in the Russian segment

55

00:03:39,076 --> 00:03:41,806

of the orbiting laboratory
maintaining life support systems

56

00:03:41,806 --> 00:03:44,456

and performing microgravity science experiments.

57

00:03:45,446 --> 00:03:50,366

Also to improve space flight safety, the two cosmonauts had conducted the BAR experiment

58

00:03:50,866 --> 00:03:54,906

which tests and validates methods to detect pressure leaks onboard the station.

59

00:03:55,416 --> 00:04:01,216

The duo also studied the cardiac bioelectric activity of a crew member at rest in space.

60

00:04:01,966 --> 00:04:07,186

Space life science experiments observe how crew members adapt to long term missions

61

00:04:07,186 --> 00:04:11,306

and teaches scientists how to keep crews healthy and prepare them for the return to Earth.

62

00:04:12,196 --> 00:04:16,846

Then on Thursday, Burbank worked with the Microgravity Science Glovebox

63

00:04:16,846 --> 00:04:20,316

in the station's Destiny Laboratory and completed some work

64

00:04:20,316 --> 00:04:22,326

on the Compound Specific Analyzer.

65

00:04:22,646 --> 00:04:27,206

Burbank also gathered and set up hardware for the EPIC card-testing and installation

66

00:04:27,206 --> 00:04:30,536

to prepare for an upgrade to computer systems aboard the station.

67

00:04:30,886 --> 00:04:35,186

He later participated in an in-flight media event speaking with reporters

68

00:04:35,186 --> 00:04:38,836

from WDIV-TV in Detroit, Michigan.

69

00:04:39,616 --> 00:04:43,576

Shkaplerov and Ivanishin had worked in the Russian segment

70

00:04:43,576 --> 00:04:47,226

of the station performing a variety of experiments and maintenance duties.

71

00:04:47,526 --> 00:04:52,306

The two cosmonauts also conducted the BAR experiment which tests and validates methods

72

00:04:52,336 --> 00:04:54,616

to detect pressure leaks onboard the station.

73

00:04:55,236 --> 00:05:00,356

And on Thursday, Shkaplerov worked with the Russian URAGAN Earth observations program

74

00:05:00,356 --> 00:05:03,316

that studies natural and

man-made disasters from space.

75

00:05:03,536 --> 00:05:07,816

Ivanishin worked with the radiation
payloads suite, Matryeshka,

76

00:05:08,096 --> 00:05:11,786

which is designed for sophisticated
radiation studies and is named

77

00:05:11,836 --> 00:05:14,476

after the traditional Russian
set of nested dolls.

78

00:05:14,536 --> 00:05:16,336

[Russian transmission]

79

00:05:16,436 --> 00:05:19,266

TRANSLATOR: The target is in the center.

0-1-1 range rate.

80

00:05:19,816 --> 00:05:21,516

[Russian transmission]

81

00:05:21,616 --> 00:05:24,336

TRANSLATOR: Expecting contact.

82

00:05:24,436 --> 00:05:25,836

TRANSLATOR: We have contact.

83

00:05:25,936 --> 00:05:26,716

[Russian transmission]

84

00:05:26,816 --> 00:05:28,206

TRANSLATOR: We have capture.

85

00:05:28,206 --> 00:05:29,166

[Russian transmission]

86
00:05:29,406 --> 00:05:36,396
COMMENTATOR: Docking confirmed at 9:19 a.m.
Central time over Southern Russia.

87
00:05:37,196 --> 00:05:38,236
Docking confirmed.

88
00:05:39,186 --> 00:05:42,586
The Soyuz slides down the chimney
at the International Space Station

89
00:05:42,586 --> 00:05:45,296
with an early Christmas present
for the Expedition 30 crew.

90
00:05:45,296 --> 00:05:48,576
A return to a steady state
six-person crew capability.

91
00:05:53,076 --> 00:05:57,586
And now you see the hatch opening
that occurred just a few minutes ago.

92
00:05:57,586 --> 00:06:01,496
Anton Shakplerov joined by Anatoly Ivanishin.

93
00:06:01,496 --> 00:06:03,836
There's Dan Burbank with his back to the camera

94
00:06:04,266 --> 00:06:11,106
as the newly-arrived crew members
arrived onboard to form a six-man crew.

95
00:06:11,106 --> 00:06:15,726
Oleg Kononenko, the Soyuz commander,
was first onboard the Rassvet module

96
00:06:15,726 --> 00:06:20,336
of the International Space Station,

occupying the center seat of the Soyuz.

97

00:06:20,896 --> 00:06:27,086

Don Pettit returning to the International Space Station that was his home in 2002 and 2003

98

00:06:27,086 --> 00:06:33,186

for six months and again as a visiting space shuttle crew member back on the STS-126 mission.

99

00:06:33,716 --> 00:06:39,536

Last onboard, European Space Agency Flight Engineer Andre Kuipers returning