1
00:00:01,459 --> 00:00:05,680
Good morning and welcome to today's International Space Station update.

2
00:00:05,680 --> 00:00:11,860
Onboard the crew of Expedition 30 continues a very busy week of experiment and maintenance

3
00:00:11,860 --> 00:00:12,860
work.

4
00:00:12,860 --> 00:00:17,900
They are being led by expedition 30 commander Dan Burbank, NASA astronaut.

5
00:00:17,900 --> 00:00:23,179
And joining him are Russian cosmonauts Anton Shkaplerov there on the left and Anatoly Ivanishin

6
00:00:23,179 --> 00:00:24,179
on the right.

7
00:00:24,179 --> 00:00:29,800
And as mentioned before the crew had a very busy week which started off at a running pace

8
00:00:29,800 --> 00:00:31,179
on Monday.

9
00:00:31,179 --> 00:00:35,610
Commander Burbank spent his day installing some alignment guides working on the combustion

10
00:00:35,610 --> 00:00:40,400
integrated rack and the fluids integrated rack and then doing some work on the waste

11
00:00:40,400 --> 00:00:46,140
and hygiene compartment which is part of the

waste reclamation system onboard the station.

12
00:00:46,140 --> 00:00:51,890
He then later did a treadmill kinematics experiment before moving on to do some work with the

13
00:00:51,890 --> 00:00:56,449
minus eighty-degree laboratory freezer or MELFI.

14
00:00:56,449 --> 00:01:02,109
Anton Shkaplerov started a human research facility holter monitor set up which was a

15
00:01:02,109 --> 00:01:07,640
battery-powered electrocardiogram that that accurately measures the heart rate of crew

16
00:01:07,640 --> 00:01:12,040
members over an extended period of time typically about 24 hours.

17
00:01:12,040 --> 00:01:17,180
He also changed out a dust collector filter cartridge on the Zvezda service module which

18
00:01:17,180 --> 00:01:21,430
is one of the Russian segments.

19
00:01:21,430 --> 00:01:28,939
His fellow crewmate Anatoly Ivanishin, we have some video of him working out on Monday

20
00:01:28,939 --> 00:01:33,909
on the ARED device, also did some dust collector filter changes but he worked on the Zarya

21
00:01:33,909 --> 00:01:39,960
module and then did some and did a monthly inspection of the TEVIS which is one of the

22
00:01:39,960 --> 00:01:44,630
treadmills on board the station before doing
some further work with the air purification

23
00:01:44,630 --> 00:01:45,700
system.

24
00:01:45,700 --> 00:01:54,859
copy
The old serial number is 048-0194

25
00:01:54,859 --> 00:02:00,369
And following all this busy work on Monday
the crew continued their pace on Tuesday doing

26
00:02:00,369 --> 00:02:05,079
an emergency egress drill which help familiarize
them with the location of all of the emergency

27
00:02:05,079 --> 00:02:10,410
equipment onboard the station, including any
necessary patches and passageways, including

28
00:02:10,410 --> 00:02:12,390
their evacuation route.

29
00:02:12,390 --> 00:02:19,000
Commander Burbank did some work with Integrated
Cardiovascular ambulatory monitoring system

30
00:02:19,000 --> 00:02:23,210
which helps to determine how much cardiac
atrophy the astronauts are subject to during

31
00:02:23,210 --> 00:02:26,200
their expedition spaceflights.

32
00:02:26,200 --> 00:02:32,520

He also analyzed some water from the water processing assembly taking a look at the total

33
00:02:32,520 --> 00:02:39,260
organic carbon analyzer with looking for any particulates that may exist.

34
00:02:39,260 --> 00:02:44,610
Later he conducted a public affairs event about talking with reporters here on the ground.

35
00:02:44,610 --> 00:02:50,790
We've been.. then moving on to do some work with the Japanese Exposed Module’s robotic

36
00:02:50,790 --> 00:02:53,080
arm.

37
00:02:53,080 --> 00:02:59,500
Anton Shkaplerov performed the Pneumocard experiment which studies the synchronization

38
00:02:59,500 --> 00:03:05,340
of heart activity and breathing factors as well as the cardiorespiratory system control

39
00:03:05,340 --> 00:03:11,670
processes as part of a suite of microbiology and bioengineering experiments onboard the

40
00:03:11,670 --> 00:03:17,160
station as the astronauts often serve as research subjects themselves.

41
00:03:17,160 --> 00:03:21,710
He did some maintenance of the Russian cooling system and transferred some cargo from the

42
00:03:21,710 --> 00:03:28,980
45 Progress vehicle also updating the station’s

inventory management system.

43
00:03:28,980 --> 00:03:33,180
Anatoly Ivanishin was also working on that
Russian cooling system doing a number of leak

44
00:03:33,180 --> 00:03:42,510
checks and then started his own 24-hour electrocardiogram
monitoring experiment before doing some preventive

45
00:03:42,510 --> 00:03:47,450
maintenance on the ventilation system inside
the Zvezda module, also known as the service

46
00:03:47,450 --> 00:03:51,430
module.

47
00:03:51,430 --> 00:03:55,990
Moving on to Wednesday Commander Burbank's
major activity of the day was the update of

48
00:03:55,990 --> 00:04:02,190
the CUCU software, CUCU standing for the COTS
UHF Communications Unit.

49
00:04:02,190 --> 00:04:07,530
COTS being the Commercial Orbital Transportation
Services, which has companies like SpaceX

50
00:04:07,530 --> 00:04:12,520
and Orbital Sciences constructing, designing
and eventually launching their own resupply

51
00:04:12,520 --> 00:04:17,070
vehicles to the International Space Station.

52
00:04:17,070 --> 00:04:22,169
this update will was in preparation for the
eventual Dragon launch.

53
00:04:22,169 --> 00:04:27,389
The Dragon capsule being the SpaceX vehicle,
will allow this comm unit to provide station

54
00:04:27,389 --> 00:04:33,500
to Dragon communications, allowing it to send
any necessary commands and provide telemetry

55
00:04:33,500 --> 00:04:36,650
eventual docking.

56
00:04:36,650 --> 00:04:41,460
Meanwhile Shkaplerov worked on the Molnyia
experiment, transferring some data and tagging

57
00:04:41,460 --> 00:04:43,540
up with ground specialists.

58
00:04:43,540 --> 00:04:49,050
This experiment looking at optical omissions
in the Earth's ionosphere and atmosphere associated

59
00:04:49,050 --> 00:04:52,389
with any thunderstorm and seismic activity.

60
00:04:52,389 --> 00:04:57,550
Rest of his day was taken up by some transfer
from the 45 Progress vehicle which docked

61
00:04:57,550 --> 00:05:02,840
back on November 2, and again updating that
inventory management system.

62
00:05:02,840 --> 00:05:06,680
Ivanishin continued work on the Pneumocard
experiment.

63
00:05:06,680 --> 00:05:10,840
Again that is a study of the heart activity

and breathing factors while the astronauts

64
00:05:10,840 --> 00:05:16,199
are subject to that microgravity environment,
before moving on to do some routine replacement

65
00:05:16,199 --> 00:05:19,699
work on the Russian toilet system.

66
00:05:19,699 --> 00:05:26,400
Then after the crew went to sleep on Wednesday,
thrusters on the Zvezda service module fired

67
00:05:26,400 --> 00:05:34,210
at about 5:11 pm central time for 62 seconds,
and this was in preparation and was the first

68
00:05:34,210 --> 00:05:39,840
of two reboosts that are going to take place
on consecutive Wednesdays that will eventually

69
00:05:39,840 --> 00:05:45,710
put the station of the correct altitude, all
in advance of the December 21 launch of the

70
00:05:45,710 --> 00:05:50,479
remainder of the Expedition 30 crew.

71
00:05:50,479 --> 00:05:56,379
Moving onto Thursday Commander Burbank was
working extensively with the PACE experiment

72
00:05:56,379 --> 00:06:01,160
which stands for Preliminary Advanced Colloids
Experiment.

73
00:06:01,160 --> 00:06:06,229
This is designed to investigate the capability
of conducting any high magnification colloid

74
00:06:06,229 --> 00:06:13,440
experiments while using the LMM or Light Microscopy Module and is in preparation for the eventual

75
00:06:13,440 --> 00:06:17,749
use of the Advanced Colloids Experiment on future expeditions.

76
00:06:17,749 --> 00:06:20,520
That would
Commander Burbank cleaned up some oil residue

77
00:06:20,520 --> 00:06:27,469
on any of the lenses inside, moving some of the old hardware, installing some new, and

78
00:06:27,469 --> 00:06:33,860
also getting some samples and an LED base ready for the eventual use.

79
00:06:33,860 --> 00:06:41,740
He ended his Integrated Cardiovascular ambulatory monitoring experiment a on Thursday, again

80
00:06:41,740 --> 00:06:47,479
looking at cardiac atrophy within the astronaut’s bodies while they’re on board.

81
00:06:47,479 --> 00:06:54,550
In order to do that he unstowed all the hardware and began downlinking all the collected data.

82
00:06:54,550 --> 00:06:59,159
And meanwhile Anton Shkaplerov was doing some work with the micro-accelerometers onboard

83
00:06:59,159 --> 00:07:05,520
the station which are investigating dynamic loads that are exerted on station during any

84
00:07:05,520 --> 00:07:08,009
dynamic events such as reboosts.

85
00:07:08,009 --> 00:07:13,569
And then was also doing some preventive maintenance
of the Zvezda service module's ventilation

86
00:07:13,569 --> 00:07:14,710
system.

87
00:07:14,710 --> 00:07:20,999
Meanwhile on Thursday Anatoly Ivanishin worked
on the Matryoshka, an experiment named after

88
00:07:20,999 --> 00:07:28,680
the Russian dolls, and this one in particular
is a torso sized object, the number of sensors

89
00:07:28,680 --> 00:07:34,439
placed throughout that help measure the ionizing
radiation exposure that astronauts are subject

90
00:07:34,439 --> 00:07:36,999
to while onboard the station.

91
00:07:36,999 --> 00:07:44,729
Then that, all of those activities throughout
the week brings us to today, Friday, where

92
00:07:44,729 --> 00:07:49,460
the crew woke up about midnight central time
and then had their daily planning conference

93
00:07:49,460 --> 00:07:55,340
as per usual and then had their weekly conference
with the Russian Space Agency's flight control

94
00:07:55,340 --> 00:07:57,979
team.

95
00:07:57,979 --> 00:08:03,259
For today's activities Commander Burbank is
doing some extensive work with the Water Recovery

96
00:08:03,259 --> 00:08:10,050
System and Water Recovery And Management System
taking a look at the waste storage tank assembly

97
00:08:10,050 --> 00:08:16,960
and transferring some excess waste into that
tank, and also later he'll do a, an audit

98
00:08:16,960 --> 00:08:24,139
of the contingency water container inside
that water recovery management system.

99
00:08:24,139 --> 00:08:31,620
Also doing some extensive work on the VO2max
system which helps evaluate the oxygen uptake

100
00:08:31,620 --> 00:08:39,370
of the astronauts before, during and after
long-duration space missions.

101
00:08:39,370 --> 00:08:44,780
This includes him setting up the CEVIS which
is a stationary bicycle, and then performing

102
00:08:44,780 --> 00:08:48,520
some setup work on the VO2max and Thermolab
instrumentation.

103
00:08:48,520 --> 00:08:56,460
And after he'd done with all those he'll
remove and discard items from the VO2max consumables

104
00:08:56,460 --> 00:08:59,910
kit and then move some items in the resupply
kit into that.

105
00:08:59,910 --> 00:09:05,120
And there you can see the CEVIS which stands
for the Cycle Ergometer With Vibration Isolation

106
00:09:05,120 --> 00:09:11,190
Stabilization, the stationary bicycle on board
the station help astronauts maintain their

107
00:09:11,190 --> 00:09:15,290
cardiovascular functions.

108
00:09:15,290 --> 00:09:20,640
Anton Shkaplerov started his day with an inventory
management system conference with controllers

109
00:09:20,640 --> 00:09:27,940
here on the ground and then did some work
with the Konstanta experiment preparing some

110
00:09:27,940 --> 00:09:33,280
photography and videos and then executing
that experiment which looks at enzyme reactions

111
00:09:33,280 --> 00:09:36,950
in the microgravity environment.

112
00:09:36,950 --> 00:09:42,130
Later he'll do more coolant system maintenance
on the Russian segment before getting some

113
00:09:42,130 --> 00:09:46,410
exercise on the TEVIS, one of the treadmill.

114
00:09:46,410 --> 00:09:50,740
And then a good portion of his day will be
taken up alongside Anatoly Ivanishin as they

115
00:09:50,740 --> 00:09:58,010

give the TEVIS its periodic chassis inspection, looking at items like belt slats, various

116
00:09:58,010 --> 00:10:06,180
nuts and then the tread belt itself and then will be replacing a few slats.

117
00:10:06,180 --> 00:10:10,430
Rounding out the crew, Anatoly Ivanishin did some laptop replacement and activation work

118
00:10:10,430 --> 00:10:15,500
in the Russian segment before getting in some exercise for the day and then moving onto

119
00:10:15,500 --> 00:10:18,460
that TEVIS chassis inspection Shkaplerov.

120
00:10:18,460 --> 00:10:25,280
He'll end his day with some exercise on that TEVIS then the crew will move into their

121
00:10:25,280 --> 00:10:30,700
second daily planning conference where they will discuss the day's activities with ground

122
00:10:30,700 --> 00:10:35,600
controllers around the globe and they will have their weekly conference with the entire

123
00:10:35,600 --> 00:10:38,410
crew and the flight director here at mission control.

124
00:10:38,410 --> 00:10:44,700
The crew is then scheduled go to sleep at about 3:30 PM central time today, ending a