1
00:00:01,060 --> 00:00:02,900
Good morning and welcome
to Mission Control Houston

2
00:00:02,900 --> 00:00:05,720
and the International Space Station update.

3
00:00:05,720 --> 00:00:09,210
On board the International Space Station
the Expedition 30 crew has been awake

4
00:00:09,210 --> 00:00:12,930
since midnight central time and they are now
more than halfway through their day and coming

5
00:00:12,930 --> 00:00:16,690
to the end of a typically busy
week onboard the space station.

6
00:00:16,690 --> 00:00:22,630
Over the past week we've seen the crew work on
a number of different scientific experiments.

7
00:00:22,630 --> 00:00:27,970
One of them that's been a recurring
activity this week is the SLICE experiment

8
00:00:27,970 --> 00:00:34,220
or the Structure and Liftoff and Combustion
Experiment which aims to improve the design

9
00:00:34,220 --> 00:00:39,580
and efficiency of combustion technologies
as well as computer models of flames

10
00:00:39,580 --> 00:00:44,340
by taking advantage of the station where
gravity doesn't complicate a flame's behavior.

11

00:00:44,340 --> 00:00:50,460
This video was recorded on Monday of Flight
Engineer Don Pettit working on that activity.

12
00:00:50,460 --> 00:00:55,440
He also spent time on yesterday and
will revisit it again next Monday.

13
00:00:55,440 --> 00:00:58,820
Predicting the shape and temperature of
burning gases is complicated on Earth

14
00:00:58,820 --> 00:01:02,710
by the buoyancy effect, so observations
of the temperature and shape of flames

15
00:01:02,710 --> 00:01:07,030
in microgravity will help scientists and
engineers improve the design and efficiency

16
00:01:07,030 --> 00:01:11,620
of combustion technology as well
as computer models of flames.

17
00:01:11,620 --> 00:01:17,030
Another experiment we saw come up several times
this week was the Capillary Flow Experiment.

18
00:01:17,030 --> 00:01:20,640
Commander Dan Burbank was working on
that one just yesterday and it looks

19
00:01:20,640 --> 00:01:25,710
at how liquids behave in microgravity as well as
how we might be able to control their behavior

20
00:01:25,710 --> 00:01:28,870
through the designs of the
containers liquids are stored in.

21

00:01:28,870 --> 00:01:35,070
That will help increase confidence in the design
systems used in space that involve liquids.

22
00:01:35,070 --> 00:01:38,900
And the BCAT-6 experiment was
another popular experiment this week.

23
00:01:38,900 --> 00:01:40,990
Pettit performed some work with it.

24
00:01:40,990 --> 00:01:45,820
Its name stands for the Binary
Colloidal Alloy Test.

25
00:01:45,820 --> 00:01:49,660
Over the course of the experiment scientists
on the ground study how liquids and gases

26
00:01:49,660 --> 00:01:52,060
that the astronauts have
mixed up for them separate

27
00:01:52,060 --> 00:01:54,970
and form structures in microgravity over time.

28
00:01:54,970 --> 00:01:59,750
For the past several days Pettit has
been working to perform checkouts

29
00:01:59,750 --> 00:02:03,550
on a combustion chamber inside
the Kibo laboratory.

30
00:02:03,550 --> 00:02:08,660
He checked out the LAN and USB
cables for that facility as well

31
00:02:08,660 --> 00:02:12,430
as the power source and its video capability.

32
00:02:12,430 --> 00:02:16,980
He actually wrapped up those checkouts
yesterday, and today Pettit scheduled

33
00:02:16,980 --> 00:02:21,170
to restow the facility back inside
the racks of the Kibo laboratory.

34
00:02:21,170 --> 00:02:28,400
You can see the hole that it goes in there, and
it's going to be ready to go now when needed.

35
00:02:28,400 --> 00:02:31,970
Although it's not an experiment, a major
activity that Commander Burbank wrapped

36
00:02:31,970 --> 00:02:34,940
up this week was the EPIC upgrade
of the station's computers.

37
00:02:34,940 --> 00:02:38,820
That stands for Enhanced Processor
and Integrated Communications

38
00:02:38,820 --> 00:02:42,180
and it describes a version of a computer
processor card that was installed on seven

39
00:02:42,180 --> 00:02:46,660
of the station's computers over the past
couple of months to better enable them

40
00:02:46,660 --> 00:02:49,540
to handle all the experiments
and other work that's now going

41
00:02:49,540 --> 00:02:52,530
on onboard the space station these days.

42
00:02:52,530 --> 00:02:58,260
Burbank installed the last of those seven, last
two of those seven processor cards on Tuesday

43
00:02:58,260 --> 00:03:01,550
and Wednesday which brings an
end to this phase of the upgrade.

44
00:03:01,550 --> 00:03:05,300
Next phase won't occur for awhile yet,
and will involve upgrading computers

45
00:03:05,300 --> 00:03:07,990
on the exterior of the space station.

46
00:03:07,990 --> 00:03:11,070
Also the station is flying little
higher now than it was last week.

47
00:03:11,070 --> 00:03:15,610
On Wednesday morning this Zvezda service
module's engines were fired for 1 minute

48
00:03:15,610 --> 00:03:23,110
and 16 seconds, raising the station to a
254 x 232 mile orbit and putting it in place

49
00:03:23,110 --> 00:03:25,470
for an upcoming string of
dockings and undockings

50
00:03:25,470 --> 00:03:29,010
to take place over the next several months.

51
00:03:29,010 --> 00:03:33,630
In addition to all that today the crew
is working on a few different activities.

52
00:03:33,630 --> 00:03:35,180

Don Pettit has been...

53
00:03:35,180 --> 00:03:40,710
spent a good portion of his day with the
EXPRESS rack four in the Destiny laboratory.

54
00:03:40,710 --> 00:03:46,240
EXPRESS racks are the structures that
are closet-sized and used to house many

55
00:03:46,240 --> 00:03:49,860
of the smaller experiments that aren't big
enough for an entire rack to themselves.

56
00:03:49,860 --> 00:03:57,470
Today Pettit was doing a change out of a failed
rack interface control on the EXPRESS rack four.

57
00:03:57,470 --> 00:04:00,810
And of course Water Recovery
Systems is an ongoing work.

58
00:04:00,810 --> 00:04:04,400
Kuipers has been working with that
on and off throughout the week

59
00:04:04,400 --> 00:04:08,720
on its regularly scheduled maintenance.

60
00:04:08,720 --> 00:04:15,820
And if you're interested in finding more about
why it's important to keep the plumbing going

61
00:04:15,820 --> 00:04:18,860
on station, you might checkout
Don Pettit's latest blog

62
00:04:18,860 --> 00:04:22,590
which can be found at blogs.nasa.gov.