



1

00:00:00,110 --> 00:00:03,479

A commercial resupply mission delivers to the space station ...

2

00:00:03,479 --> 00:00:06,700

Visits from recently returned space station astronauts ...

3

00:00:06,700 --> 00:00:13,339

And using deflection as a technique for planetary defense ... a few of the stories to tell you

4

00:00:13,339 --> 00:00:16,240

about – This Week at NASA!

5

00:00:16,240 --> 00:00:21,380

On May 6, SpaceX's Dragon cargo spacecraft arrived at the International Space Station

6

00:00:21,380 --> 00:00:26,550

– two days after being launched from Cape Canaveral Air Force Station in Florida.

7

00:00:26,550 --> 00:00:31,620

The Dragon delivered more than 5,500 pounds of research, supplies and hardware to the

8

00:00:31,620 --> 00:00:32,840

orbital complex.

9

00:00:32,840 --> 00:00:37,890

It will remain at the station for approximately one month before returning to Earth with about

10

00:00:37,890 --> 00:00:42,470

3,300 pounds of cargo and research.

11

00:00:42,470 --> 00:00:48,510

Our Drew Feustel, who served as space station

Commander during Expedition 55/56, made several

12

00:00:48,510 --> 00:00:53,470

post-flight appearances in the Washington, D.C. area – including a short presentation

13

00:00:53,470 --> 00:00:56,880

May 9 for employees at NASA Headquarters.

14

00:00:56,880 --> 00:01:01,790

The week before, our Ricky Arnold – a member of that same expedition crew – also visited

15

00:01:01,790 --> 00:01:02,790

D.C.

16

00:01:02,790 --> 00:01:08,430

Arnold and Feustel returned to Earth Oct. 4 after spending just over six months on the

17

00:01:08,430 --> 00:01:10,440

station.

18

00:01:10,440 --> 00:01:15,330

Our Double Asteroid Redirection Test, or DART is the first-ever mission to demonstrate a

19

00:01:15,330 --> 00:01:20,630

planetary defense technique that will deflect an asteroid by colliding a spacecraft into

20

00:01:20,630 --> 00:01:21,630

it at a high speed.

21

00:01:21,630 --> 00:01:27,290

The mission's target – Didymos B – is the small moonlet orbiting a larger body in

22

00:01:27,290 --> 00:01:30,369

the binary asteroid system Didymos.

23
00:01:30,369 --> 00:01:35,550
Performing the test with a binary system will enable researchers to more easily observe

24
00:01:35,550 --> 00:01:40,220
changes to the orbit of the smaller body, than if it were a single asteroid orbiting

25
00:01:40,220 --> 00:01:41,260
the Sun.

26
00:01:41,260 --> 00:01:44,640
DART is targeted for launch in June 2021.

27
00:01:44,640 --> 00:01:50,240
It will intercept Didymos B in October 2022, when the asteroid is within about 11 million

28
00:01:50,240 --> 00:01:53,240
kilometers of Earth.

29
00:01:53,240 --> 00:01:58,720
For the first time, our Mars Odyssey spacecraft captured imagery of the Martian moon Phobos

30
00:01:58,720 --> 00:02:00,920
during a full moon phase.

31
00:02:00,920 --> 00:02:05,990
Each color in the new image represents a temperature range detected by the Thermal Emission Imaging

32
00:02:05,990 --> 00:02:10,229
System, or THEMIS – Odyssey's infrared heat-vision camera.

33
00:02:10,229 --> 00:02:14,340

THEMIS has been studying the moon since September of 2017.

34
00:02:14,340 --> 00:02:19,310
This full moon view is better for studying material composition, whereas half-moon views

35
00:02:19,310 --> 00:02:23,510
are better for looking at surface textures.

36
00:02:23,510 --> 00:02:29,150
A pair of interns at our Langley Research Center in Hampton, Virginia are using 3D printers

37
00:02:29,150 --> 00:02:34,930
to develop a series of soft, flexible robotic actuators to investigate the viability of

38
00:02:34,930 --> 00:02:41,069
using soft robots for future space exploration and assembly tasks – possibly during missions

39
00:02:41,069 --> 00:02:43,230
to the Moon and Mars.

40
00:02:43,230 --> 00:02:48,720
Being constructed from highly flexible materials, such as silicone, enables soft robots to move

41
00:02:48,720 --> 00:02:54,010
more like living organisms – which allows for an increased range of motion that traditional

42
00:02:54,010 --> 00:02:56,250
metal robots do not have.

43
00:02:56,250 --> 00:02:59,410
That's what's up this week @NASA ...