SPACE TO GROUND

1
00:00:04,870 --> 00:00:03,030
houston station on space to ground

2
00:00:06,470 --> 00:00:04,880
welcome to space to ground your weekly

3
00:00:08,230 --> 00:00:06,480
look at what's happening on board the

4
00:00:11,190 --> 00:00:08,240
international space station i'm dan

5
00:00:12,629 --> 00:00:11,200
hewitt 2016 is off and running and two

6
00:00:14,629 --> 00:00:12,639
crew members are gearing up for the

7
00:00:17,349 --> 00:00:14,639
year's first spacewalk

8
00:00:19,189 --> 00:00:17,359
nasa's tim copra and issa's tim peake

9
00:00:20,950 --> 00:00:19,199
spent the week checking out spacesuits

10
00:00:23,750 --> 00:00:20,960
and building tools for a spacewalk

11
00:00:25,830 --> 00:00:23,760
coming up on january 15th the pair will

12
00:00:28,470 --> 00:00:25,840
be replacing a voltage regulator that

13
00:00:31,189 --> 00:00:28,480

failed back in november 2015 which will

14
00:00:33,430 --> 00:00:31,199
return the station back to full power

15
00:00:35,990 --> 00:00:33,440
and humans aren't the only ones working

16
00:00:38,150 --> 00:00:36,000
outside the international space station

17
00:00:40,389 --> 00:00:38,160
the robotic refueling mission continued

18
00:00:43,030 --> 00:00:40,399
this week with the station's canadarm2

19
00:00:44,630 --> 00:00:43,040
robotic arm and dexter robot working in

20
00:00:46,950 --> 00:00:44,640
the vacuum of space

21
00:00:49,190 --> 00:00:46,960
this complex technology demonstration is

22
00:00:51,510 --> 00:00:49,200
testing the tools and techniques that

23
00:00:54,470 --> 00:00:51,520
could one day enable robots to refuel

24
00:00:56,549 --> 00:00:54,480
repair and upgrade satellites in space

25
00:00:59,670 --> 00:00:56,559
and there was no shortage of science

26
00:01:01,270 --> 00:00:59,680
inside as well astronaut tim peake put

27
00:01:04,390 --> 00:01:01,280
on his physics hat to work with the

28
00:01:06,230 --> 00:01:04,400
advanced colloids experiment heated too

29
00:01:08,789 --> 00:01:06,240
this complex study monitors the

30
00:01:10,630 --> 00:01:08,799
formation of 3d crystalline structures

31
00:01:12,789 --> 00:01:10,640
from samples of colloids which are

32
00:01:15,429 --> 00:01:12,799
collections of microscopic particles in

33
00:01:17,590 --> 00:01:15,439
a solution sounds really complicated so

34
00:01:19,590 --> 00:01:17,600
why is understanding this important

35
00:01:21,990 --> 00:01:19,600
because colloids are actually found in

36
00:01:25,109 --> 00:01:22,000
many products we use every day here on

37
00:01:26,469 --> 00:01:25,119
earth including fuels household cleaners

38
00:01:27,990 --> 00:01:26,479

even food

39
00:01:29,990 --> 00:01:28,000
knowing the process behind their

40
00:01:32,870 --> 00:01:30,000
formation can help in the development of

41
00:01:34,630 --> 00:01:32,880
new and better products and materials

42
00:01:36,390 --> 00:01:34,640
this week's twitter question comes from

43
00:01:38,230 --> 00:01:36,400
zach who wanted to know if any new

44
00:01:40,870 --> 00:01:38,240
high-tech stuff recently arrived on

45
00:01:42,550 --> 00:01:40,880
station well orbital atk cygnus

46
00:01:44,389 --> 00:01:42,560
delivered a new device that's straight

47
00:01:46,550 --> 00:01:44,399
out of science fiction

48
00:01:49,270 --> 00:01:46,560
nasa's project sidekick is using

49
00:01:51,190 --> 00:01:49,280
microsoft's new hololens technology to

50
00:01:54,230 --> 00:01:51,200
empower astronauts on the station like

51
00:01:55,830 --> 00:01:54,240
never before it will use virtual reality

52
00:01:58,069 --> 00:01:55,840
to give crew members real-time

53
00:01:59,510 --> 00:01:58,079
instructions and assistance whether it

54
00:02:01,590 --> 00:01:59,520
comes from someone on the ground

55
00:02:03,830 --> 00:02:01,600
following along or from built-in

56
00:02:05,749 --> 00:02:03,840
holographic illustrations for whatever

57
00:02:07,670 --> 00:02:05,759
project they're tackling

58
00:02:09,990 --> 00:02:07,680
keep sending us your questions using the