SpacetoGround

1
00:00:05,889 --> 00:00:02,790
foreign

2
00:00:09,110 --> 00:00:05,899
[Music]

3
00:00:11,030 --> 00:00:09,120
I'm Noah for ramji for over six decades

4
00:00:13,129 --> 00:00:11,040
humans have been flying beyond Earth's

5
00:00:15,110 --> 00:00:13,139
atmosphere and exploring space during

6
00:00:17,090 --> 00:00:15,120
this time in orbit we have expanded our

7
00:00:19,250 --> 00:00:17,100
knowledge of the world and ourselves

8
00:00:21,290 --> 00:00:19,260
this week aboard the International Space

9
00:00:24,109 --> 00:00:21,300
Station we continue to seek advancements

10
00:00:25,970 --> 00:00:24,119
as we aim toward a return to the Moon

11
00:00:27,950 --> 00:00:25,980
the microgravity environment that the

12
00:00:29,990 --> 00:00:27,960
orbiting laboratory provides allows for

13
00:00:32,630 --> 00:00:30,000

a unique approach in studying dexterous

14
00:00:34,430 --> 00:00:32,640
manipulation the grip experiment studies

15
00:00:36,110 --> 00:00:34,440
a series of Maneuvers performed at

16
00:00:38,150 --> 00:00:36,120
different stages of astronauts as

17
00:00:39,709 --> 00:00:38,160
missions to track the changes over the

18
00:00:41,930 --> 00:00:39,719
course of time while living in

19
00:00:43,850 --> 00:00:41,940
microgravity astronauts often perform

20
00:00:46,130 --> 00:00:43,860
activities involving careful use of

21
00:00:47,810 --> 00:00:46,140
small objects it's important for us to

22
00:00:49,790 --> 00:00:47,820
understand how living in microgravity

23
00:00:51,770 --> 00:00:49,800
impacts their grass and fine motor

24
00:00:53,810 --> 00:00:51,780
controls something the grip experiment

25
00:00:55,790 --> 00:00:53,820
aims to learn what we learn could

26
00:00:58,250 --> 00:00:55,800
contribute to the design and control of

27
00:00:59,810 --> 00:00:58,260
intelligent haptic interfaces used in

28
00:01:02,990 --> 00:00:59,820
challenging environments such as deep

29
00:01:04,850 --> 00:01:03,000
space planets and moons or asteroids it

30
00:01:07,190 --> 00:01:04,860
could also Aid engineers in designing

31
00:01:08,929 --> 00:01:07,200
prosthetic limbs back on Earth grip may

32
00:01:10,670 --> 00:01:08,939
also be used to identify potential

33
00:01:13,010 --> 00:01:10,680
hazards for astronauts as they move

34
00:01:14,630 --> 00:01:13,020
between gravitational environments the

35
00:01:16,789 --> 00:01:14,640
study aims to increase our understanding

36
00:01:19,429 --> 00:01:16,799
of how the human nervous system controls

37
00:01:21,230 --> 00:01:19,439
both movement on Earth and in space

38
00:01:23,870 --> 00:01:21,240

more science continues with the

39
00:01:26,030 --> 00:01:23,880
biofabrication facility or BFF a 3D

40
00:01:28,010 --> 00:01:26,040
bioprinter being tested to print the

41
00:01:29,450 --> 00:01:28,020
tiny complex structures found inside

42
00:01:32,149 --> 00:01:29,460
human organs

43
00:01:33,770 --> 00:01:32,159
3D bioprinting technology has advanced

44
00:01:35,270 --> 00:01:33,780
considerably over the years but

45
00:01:37,850 --> 00:01:35,280
scientists are still challenged when

46
00:01:39,950 --> 00:01:37,860
fabricating the complex network of tiny

47
00:01:42,289 --> 00:01:39,960
void spaces inside organs such as

48
00:01:43,789 --> 00:01:42,299
capillary structures the microgravity

49
00:01:45,289 --> 00:01:43,799
environment removes the need for

50
00:01:48,410 --> 00:01:45,299
scaffolding structures to support

51
00:01:50,450 --> 00:01:48,420
complex tissue shapes BFF is an early

52
00:01:53,090 --> 00:01:50,460
step of a larger plant to manufacture

53
00:01:54,889 --> 00:01:53,100
whole human organs in space astronauts

54
00:01:56,990 --> 00:01:54,899
recently installed the BFF and are

55
00:01:59,330 --> 00:01:57,000
preparing it for experiments seeking to

56
00:02:01,550 --> 00:01:59,340
print a knee meniscus and cardiac tissue

57
00:02:02,810 --> 00:02:01,560
samples in the coming months

58
00:02:05,270 --> 00:02:02,820
did you know that the International

59
00:02:08,150 --> 00:02:05,280
Space Station is visible from Earth

60
00:02:09,830 --> 00:02:08,160
you can spot the station and here's why

61
00:02:11,510 --> 00:02:09,840
just like we can see the moon from Earth

62
00:02:13,610 --> 00:02:11,520
the International Space Station is

63
00:02:15,830 --> 00:02:13,620

visible because it reflects the light of

64
00:02:17,630 --> 00:02:15,840
the Sun but unlike the moon the space

65
00:02:19,910 --> 00:02:17,640
station is not bright enough to see

66
00:02:22,729 --> 00:02:19,920
during the day it can only be seen in

67
00:02:24,589 --> 00:02:22,739
the dawn dusk or night skies the space

68
00:02:26,930 --> 00:02:24,599
station is visible to the naked eye and

69
00:02:28,850 --> 00:02:26,940
looks like a fast-moving plane only much

70
00:02:30,110 --> 00:02:28,860
higher in traveling thousands of miles

71
00:02:31,850 --> 00:02:30,120
faster

72
00:02:34,250 --> 00:02:31,860
don't forget to watch the space station

73
00:02:36,229 --> 00:02:34,260
pass overhead it is the third brightest

74
00:02:39,670 --> 00:02:36,239
object in the sky and easy to spot if

75
00:02:41,449 --> 00:02:39,680
you know where to look visit

76
00:02:43,610 --> 00:02:41,459
spotthestation.nasa.gov to find out when

77
00:02:44,990 --> 00:02:43,620
it's passing over you that's space to

78
00:02:49,790 --> 00:02:45,000
ground for this week thanks so much for