



# Space **to** Ground

1  
00:00:06,869 --> 00:00:04,950  
houston station on space to ground

2  
00:00:09,430 --> 00:00:06,879  
welcome to space to ground i'm sandra

3  
00:00:11,270 --> 00:00:09,440  
jones this week a million hour science

4  
00:00:13,509 --> 00:00:11,280  
milestone was reached on board the

5  
00:00:15,829 --> 00:00:13,519  
international space station and we're

6  
00:00:18,310 --> 00:00:15,839  
using the flight of the astrobee robots

7  
00:00:20,710 --> 00:00:18,320  
to troubleshoot potential risk

8  
00:00:23,189 --> 00:00:20,720  
the international space station is first

9  
00:00:25,750 --> 00:00:23,199  
and foremost an orbiting laboratory and

10  
00:00:28,550 --> 00:00:25,760  
has been continuously operated for over

11  
00:00:31,189 --> 00:00:28,560  
21 years for just that reason

12  
00:00:32,950 --> 00:00:31,199  
at any given time there are two to 300

13  
00:00:35,110 --> 00:00:32,960

science experiments being conducted

14

00:00:37,350 --> 00:00:35,120

aboard the space station we're able to

15

00:00:39,910 --> 00:00:37,360

house and operate so many experiments

16

00:00:41,670 --> 00:00:39,920

largely thanks to 12 modular racks that

17

00:00:44,389 --> 00:00:41,680

provide power and other structures

18

00:00:46,389 --> 00:00:44,399

needed to operate in space that expedite

19

00:00:48,950 --> 00:00:46,399

the processing of experiments to the

20

00:00:51,350 --> 00:00:48,960

space station or express racks system

21

00:00:53,590 --> 00:00:51,360

reached a major milestone of 1 million

22

00:00:54,630 --> 00:00:53,600

hours of cumulative operating time this

23

00:00:55,750 --> 00:00:54,640

week

24

00:00:57,510 --> 00:00:55,760

now to put

25

00:01:00,790 --> 00:00:57,520

a million hours in perspective that's

26  
00:01:02,229 --> 00:01:00,800  
over 114 years and 114 years ago it's

27  
00:01:04,310 --> 00:01:02,239  
five years after the wright brothers

28  
00:01:05,910 --> 00:01:04,320  
first powered flight the birth of the

29  
00:01:07,670 --> 00:01:05,920  
aerospace industry

30  
00:01:08,710 --> 00:01:07,680  
this million hour milestone would not

31  
00:01:10,870 --> 00:01:08,720  
have been possible without the

32  
00:01:13,830 --> 00:01:10,880  
dedication and vigilance of the crew

33  
00:01:15,670 --> 00:01:13,840  
flight controllers and engineering teams

34  
00:01:17,990 --> 00:01:15,680  
what if you could identify the need to

35  
00:01:20,469 --> 00:01:18,000  
repair a potential problem with plenty

36  
00:01:22,310 --> 00:01:20,479  
of time to fix it an investigation on

37  
00:01:25,590 --> 00:01:22,320  
the space station is looking into this

38  
00:01:28,070 --> 00:01:25,600

by using robotics and sound

39

00:01:30,550 --> 00:01:28,080

nasa astronaut jessica watkins conducted

40

00:01:32,710 --> 00:01:30,560

operations with the astrobees related to

41

00:01:35,030 --> 00:01:32,720

soundc which monitors the acoustic

42

00:01:37,910 --> 00:01:35,040

environment using an audio sensor on

43

00:01:39,830 --> 00:01:37,920

astrobee the system can detect anomalies

44

00:01:41,990 --> 00:01:39,840

in the sound of components inside a

45

00:01:44,069 --> 00:01:42,000

machine providing autonomous monitoring

46

00:01:46,550 --> 00:01:44,079

of the health of infrastructure such as

47

00:01:48,550 --> 00:01:46,560

life support and exercise equipment on

48

00:01:50,389 --> 00:01:48,560

earth autonomous audio monitoring of the

49

00:01:52,550 --> 00:01:50,399

health of machines could be applied in a

50

00:01:54,870 --> 00:01:52,560

variety of settings such as healthcare

51  
00:01:56,950 --> 00:01:54,880  
and infrastructure development

52  
00:01:59,590 --> 00:01:56,960  
for many the accessibility to a health

53  
00:02:01,590 --> 00:01:59,600  
facility is not a short car drive away

54  
00:02:03,749 --> 00:02:01,600  
that's true for people living in remote

55  
00:02:06,069 --> 00:02:03,759  
areas on our planet and for crews aboard

56  
00:02:08,150 --> 00:02:06,079  
the international space station

57  
00:02:10,229 --> 00:02:08,160  
a project on the space station called

58  
00:02:12,869 --> 00:02:10,239  
advanced diagnostic ultrasound in

59  
00:02:15,350 --> 00:02:12,879  
microgravity was created to see how to

60  
00:02:19,030 --> 00:02:15,360  
potentially diagnose medical conditions

61  
00:02:21,030 --> 00:02:19,040  
and injuries in space using ultrasound

62  
00:02:23,510 --> 00:02:21,040  
we invite you to tune into the latest

63  
00:02:25,270 --> 00:02:23,520

episode of houston we have a podcast

64

00:02:27,270 --> 00:02:25,280

where we will be discussing how this

65

00:02:29,830 --> 00:02:27,280

project could not only impact the health

66

00:02:31,910 --> 00:02:29,840

of astronauts during long-duration space

67

00:02:34,949 --> 00:02:31,920

missions in the future but how it

68

00:02:37,030 --> 00:02:34,959

already has impacted people on earth

69

00:02:38,790 --> 00:02:37,040

and that's space to ground for this week

70

00:02:41,120 --> 00:02:38,800

thanks so much for watching we'll see

71

00:02:58,949 --> 00:02:41,130

you next week