



SPACE TO GROUND

1
00:00:00,600 --> 00:00:02,540
"HOUSTON, STATION
ON SPACE TO GROUND"

2
00:00:03,760 --> 00:00:06,240
THAT VIEW SPEAKS FOR ITSELF.

3
00:00:07,540 --> 00:00:10,120
WELCOME TO SPACE TO
GROUND, I'M DAN HUOT.

4
00:00:10,436 --> 00:00:14,356
ANOTHER WEEK, ANOTHER SPACEWALK
FOR THE CREW OF EXPEDITION 50.

5
00:00:15,256 --> 00:00:18,136
THIS WEEK SAW NASA
ASTRONAUTS SHANE KIMBROUGH

6
00:00:18,136 --> 00:00:21,286
AND PEGGY WHITSON WORKING
TOGETHER FOR SEVERAL HOURS

7
00:00:21,286 --> 00:00:22,456
IN THE VACUUM OF SPACE.

8
00:00:23,086 --> 00:00:26,856
THEY SUCCESSFULLY SWAPPED IN
AN UPGRADED COMPUTER RELAY BOX

9
00:00:27,006 --> 00:00:30,466
WHICH GIVES MISSION CONTROL
ACCESS AND DATA FROM A BUNCH

10
00:00:30,466 --> 00:00:32,626
OF SYSTEMS ON THE
OUTSIDE PART OF STATION.

11
00:00:33,216 --> 00:00:35,406

THEY REMOVED A COVER
AND PLUGGED IN CABLES

12

00:00:35,406 --> 00:00:38,916
ON PRESSURIZED MATING
ADAPTER-3, WHICH WAS JUST MOVED

13

00:00:38,916 --> 00:00:41,626
OVER THE WEEKEND AND WILL
BE A FUTURE DOCKING PORT

14

00:00:41,736 --> 00:00:43,386
FOR COMMERCIAL CREW SPACECRAFT.

15

00:00:44,086 --> 00:00:47,786
AND THEY INSTALLED SHIELDING FOR
THE NOW EMPTY PORT ON NODE 3,

16

00:00:47,876 --> 00:00:50,086
AND SOME SHIELDING ON PMA-3.

17

00:00:50,686 --> 00:00:53,156
AND WITH THIS BEING
WHITSON'S EIGHTH SPACEWALK,

18

00:00:53,156 --> 00:00:55,766
SHE NOW HOLDS THE RECORD
FOR MOST SPACEWALKS

19

00:00:55,766 --> 00:00:57,266
BY A FEMALE ASTRONAUT.

20

00:00:57,886 --> 00:01:00,916
EVEN WITH ANOTHER SPACEWALK,
THE CREW FOUND THE TIME

21

00:01:00,920 --> 00:01:02,700
FOR SOME ADVANCED SPACE SCIENCE.

22

00:01:03,320 --> 00:01:07,096
PEGGY WHITSON SET UP HARDWARE
FOR THE ACE-T-1 EXPERIMENT,

23
00:01:07,096 --> 00:01:10,846
WHICH IS INVESTIGATING COLLOIDS,
OR TINY SUSPENDED PARTICLES.

24
00:01:10,846 --> 00:01:14,666
THE PARTICULAR PARTICLES USED
IN THIS EXPERIMENT ARE REFERRED

25
00:01:14,666 --> 00:01:16,236
TO AS JANUS PARTICLES,

26
00:01:16,406 --> 00:01:19,196
NAMED AFTER THE TWO
FACED ROMAN GOD JANUS

27
00:01:19,256 --> 00:01:22,236
BECAUSE THESE PARTICLES
POSSESS TWO DISTINCT TYPES

28
00:01:22,236 --> 00:01:25,266
OF PROPERTIES: ONE HALF
OF THEIR SURFACE INTRACTS

29
00:01:25,266 --> 00:01:27,926
WITH WATER WHILE THE
OTHER HALF REPELS IT.

30
00:01:28,256 --> 00:01:31,246
STUDYING THESE IN SPACE HELPS
SCIENTISTS UNDERSTAND THEIR

31
00:01:31,326 --> 00:01:34,226
FUNDAMENTAL BEHAVIOR WHICH
COULD LEAD TO A METHOD

32
00:01:34,226 --> 00:01:37,986

OF CREATING SELF-ASSEMBLING
OR SELF-REPLICATING MATERIALS!

33

00:01:38,726 --> 00:01:41,476
OUR TWITTER QUESTION THIS WEEK
COMES FROM AUSTIN WHO WANTS

34

00:01:41,536 --> 00:01:44,386
TO KNOW IF THE ASTRONAUT'S
EARS POP ON SPACEWALKS

35

00:01:44,576 --> 00:01:46,476
BECAUSE OF THE LOWER
PRESSURE IN THE SUIT.

36

00:01:47,006 --> 00:01:48,646
EXCELLENT QUESTION AUSTIN.

37

00:01:48,646 --> 00:01:51,526
THE ANSWER IS YES FOR
SOME, BUT WE DO A LOT

38

00:01:51,676 --> 00:01:53,786
TO MAKE SURE THE PRESSURE
CHANGES AREN'T TOO HARD

39

00:01:53,786 --> 00:01:54,500
ON THE CREW.

40

00:01:55,220 --> 00:01:59,786
THE PRESSURE ON STATION IS
ABOUT 14.7 PSI, THE EXACT SAME

41

00:01:59,786 --> 00:02:01,626
AS AT SEA LEVEL HERE ON EARTH.

42

00:02:01,966 --> 00:02:05,286
IN A SUIT IT'S ONLY 4.3,
WHICH MAKES IT EASIER

43

00:02:05,286 --> 00:02:07,676

FOR THE ASTRONAUTS TO
MOVE AROUND WHILE WORKING

44

00:02:07,676 --> 00:02:09,026

IN THE VACUUM OF SPACE.

45

00:02:09,526 --> 00:02:11,996

THEY DO LIGHT EXERCISE
AFTER GETTING SUITED

46

00:02:11,996 --> 00:02:14,636

UP TO REMOVE EXTRA
NITROGEN FROM THEIR BLOOD,

47

00:02:14,906 --> 00:02:17,086

WHICH HELPS THEM AVOID
DECOMPRESSION SICKNESS,

48

00:02:17,136 --> 00:02:20,436

OR THE BENDS AS ANY SCUBA
DIVERS MIGHT CALL IT.

49

00:02:20,606 --> 00:02:21,876

AT THE END OF THE SPACEWALK,

50

00:02:21,876 --> 00:02:24,786

THEY GRADUALLY RAISE THE
PRESSURE INSIDE THE AIRLOCK

51

00:02:24,786 --> 00:02:27,546

TO AVOID THINGS LIKE POPPING
EARS BUT IT CAN HAPPEN.

52

00:02:28,516 --> 00:02:31,026

KEEP SENDING YOUR
QUESTIONS USING THE HASHTAG