



**Space**to**Ground**

1  
00:00:02,706 --> 00:00:04,656  
"HOUSTON, STATION  
ON SPACE TO GROUND."

2  
00:00:05,236 --> 00:00:07,466  
WELCOME TO SPACE TO  
GROUND, I'M LEAH CHESHER.

3  
00:00:07,826 --> 00:00:10,656  
THIS WEEK, ASTRONAUTS INSIDE  
THE SPACE STATION PREPARED AN

4  
00:00:10,696 --> 00:00:13,006  
EXTERNAL EXPERIMENT THAT  
WILL TEST THE ABILITY

5  
00:00:13,006 --> 00:00:14,916  
TO STORE FUEL FOR  
FUTURE MISSIONS.

6  
00:00:16,406 --> 00:00:17,916  
NASA ASTRONAUT ANNE MCCLAIN

7  
00:00:17,916 --> 00:00:20,656  
AND CANADIAN SPACE AGENCY  
ASTRONAUT DAVID SAINT-JACQUES

8  
00:00:20,886 --> 00:00:24,686  
PREPARED THE ROBOTIC  
REFUELING MISSION-3, OR RRM-3,

9  
00:00:24,976 --> 00:00:27,136  
FOR ITS TRANSFER OUTSIDE  
THROUGH THE AIRLOCK

10  
00:00:27,136 --> 00:00:28,846  
IN THE JAPANESE EXPERIMENT  
MODULE.

11

00:00:29,456 --> 00:00:33,266  
RRM-3 DEMONSTRATES THE FIRST  
TRANSFER AND LONG TERM STORAGE

12  
00:00:33,266 --> 00:00:36,386  
OF LIQUID METHANE, A CRYOGENIC  
FLUID, IN MICROGRAVITY.

13  
00:00:36,866 --> 00:00:40,056  
SPACECRAFT USE CRYOGENIC FLUIDS  
AS PROPELLANTS OR COOLANTS

14  
00:00:40,216 --> 00:00:43,916  
AND BEING ABLE TO REFUEL WHILE  
IN SPACE WILL BE A HUGE BOOST

15  
00:00:43,916 --> 00:00:47,106  
TO ENABLING LONG DURATION  
MISSIONS TO FUTURE DESTINATIONS,

16  
00:00:47,386 --> 00:00:48,726  
LIKE THE MOON OR MARS.

17  
00:00:49,236 --> 00:00:52,596  
A SUIT CAN MAKE ANYONE LOOK  
THEIR BEST, BUT IT'S CRITICAL

18  
00:00:52,596 --> 00:00:55,166  
FOR ASTRONAUTS THAT THEIR  
SPACE SUITS WORK THEIR BEST.

19  
00:00:56,766 --> 00:00:59,646  
SPACE SUITS REQUIRE ROUTINE  
MAINTENANCE TO ENSURE THEY ARE

20  
00:00:59,646 --> 00:01:02,736  
IN PROPER CONDITION BEFORE  
AN ASTRONAUT VENTURES OUTSIDE

21  
00:01:02,736 --> 00:01:03,546

ON A SPACEWALK.

22

00:01:04,136 --> 00:01:06,956  
SPACE SUITS ARE LIKE INDIVIDUAL,  
HUMAN-SIZED SPACECRAFT,

23

00:01:07,266 --> 00:01:09,706  
EACH CONTAINING ITS OWN  
PORTABLE LIFE SUPPORT SYSTEM.

24

00:01:10,296 --> 00:01:13,236  
THIS INCLUDES THE FAN PUMP  
SEPARATOR, WHICH CIRCULATES AIR

25

00:01:13,236 --> 00:01:14,946  
THROUGH THE OXYGEN  
VENTILATION CIRCUIT

26

00:01:14,946 --> 00:01:17,156  
AND TRANSPORTS THE  
SUIT'S COOLANT FLUID.

27

00:01:17,756 --> 00:01:19,016  
ASTRONAUTS ANNE MCCLAIN

28

00:01:19,016 --> 00:01:22,366  
AND DAVID SAINT-JACQUES REMOVED  
ONE SUIT'S FAN PUMP SEPARATOR

29

00:01:22,366 --> 00:01:26,026  
AND REPLACED IT WITH AN ON-ORBIT  
SPARE, THEN PRESSURIZED THE SUIT

30

00:01:26,026 --> 00:01:27,206  
TO CONDUCT A LEAK CHECK.

31

00:01:27,206 --> 00:01:30,916  
THIS WEEK'S QUESTION COMES FROM  
FIFTH GRADER OLIVER WHO WANTS

32

00:01:30,946 --> 00:01:32,586

TO KNOW IF THERE IS  
INTERNET IN SPACE.

33

00:01:33,046 --> 00:01:35,896

IN FACT, THE "WORLD WIDE  
WEB" EXTENDS BEYOND THE WORLD

34

00:01:35,896 --> 00:01:37,086

AND INTO SPACE, AS WELL.

35

00:01:38,176 --> 00:01:40,666

ASTRONAUTS HAVE ACCESS TO  
WHAT WE CALL "CREW NET,"

36

00:01:41,206 --> 00:01:43,676

INTERNET AVAILABLE ON TABLETS  
ABOARD THE INTERNATIONAL

37

00:01:43,746 --> 00:01:44,456

SPACE STATION.

38

00:01:45,046 --> 00:01:46,836

CREW MEMBERS ARE  
ABLE TO SEND EMAILS

39

00:01:46,866 --> 00:01:48,816

AND MANY EVEN HAVE  
SOCIAL MEDIA ACCOUNTS.

40

00:01:49,716 --> 00:01:52,416

YOU CAN FOLLOW NASA ASTRONAUT  
ANNE MCCLAIN ON TWITTER

41

00:01:52,416 --> 00:01:56,326

AT @ASTROANNIMAL, AND CANADIAN  
SPACE AGENCY ASTRONAUT DAVID

42

00:01:56,400 --> 00:01:59,220

SAINT-JACQUES AT @ASTRO\_DAVIDS.