



# SPACE TO GROUND

1  
00:00:00,600 --> 00:00:02,620  
"HOUSTON, STATION  
ON SPACE TO GROUND."

2  
00:00:03,160 --> 00:00:05,500  
WELCOME TO SPACE TO  
GROUND, I'M HAYLEY FICK.

3  
00:00:05,500 --> 00:00:07,800  
WE'RE CONTINUING OUR SUMMER  
ROAD TRIP, SHOWING OFF SOME

4  
00:00:07,806 --> 00:00:09,756  
OF THE SIGHTS AT THE NASA  
JOHNSON SPACE CENTER.

5  
00:00:10,140 --> 00:00:13,460  
TODAY WE'RE IN FRONT OF THE SATURN V ROCKET HERE AT ROCKET PARK.

6  
00:00:14,240 --> 00:00:16,576  
JULY 20TH MARKED  
THE 48TH ANNIVERSARY

7  
00:00:16,576 --> 00:00:18,486  
OF THE APOLLO 11 MOON LANDING.

8  
00:00:18,676 --> 00:00:21,866  
NEIL ARMSTRONG, BUZZ ALDRIN,  
AND MICHAEL COLLINS LAUNCHED

9  
00:00:21,866 --> 00:00:25,826  
ON JULY 16, 1969 ATOP  
A SATURN V ROCKET JUST

10  
00:00:25,826 --> 00:00:27,566  
LIKE THE ONE BEHIND  
ME, AND SPLASHED

11  
00:00:27,566 --> 00:00:30,976

DOWN IN THE PACIFIC OCEAN AFTER  
A SUCCESSFUL MISSION ON JULY 21.

12  
00:00:32,196 --> 00:00:35,136  
WE'RE ALREADY GETTING READY FOR  
OUR NEXT MISSION BEYOND THE MOON

13  
00:00:35,136 --> 00:00:38,056  
WITH OUR ORION SPACECRAFT AND  
SPACE LAUNCH SYSTEM ROCKET.

14  
00:00:38,996 --> 00:00:40,406  
WHEN ASTRONAUTS RETURN TO EARTH

15  
00:00:40,406 --> 00:00:43,066  
FROM DESTINATIONS BEYOND  
THE MOON AND SPLASHDOWN

16  
00:00:43,066 --> 00:00:45,116  
IN THE PACIFIC OCEAN,  
THEY'LL NEED TO SAFELY GET

17  
00:00:45,116 --> 00:00:47,676  
OUT OF THE ORION SPACECRAFT  
AND BACK ON DRY LAND.

18  
00:00:48,080 --> 00:00:51,140  
USING THE GULF OF MEXICO WATERS  
OFF THE COAST OF GALVESTION,

19  
00:00:51,140 --> 00:00:53,880  
TEXAS, WE WORKED WITH A  
DEPARTMENT OF DEFENSE TEAM

20  
00:00:53,880 --> 00:00:55,976  
TO TEST ORION EXIT  
PROCEDURES IN A VARIETY

21  
00:00:55,976 --> 00:00:57,826  
OF SCENARIOS JULY 10 -14.

22

00:00:58,696 --> 00:01:01,956

ASTRONAUTS DONNED ORION CREW  
SURVIVAL SYSTEM SPACESUITS

23

00:01:01,956 --> 00:01:05,226

TO MAKE THE TESTING AS TRUE TO  
MISSION SCENARIOS AS POSSIBLE.

24

00:01:06,246 --> 00:01:08,776

HUMAN RESEARCH BEING CONDUCTED  
ABOARD THE SPACE STATION IS

25

00:01:08,780 --> 00:01:11,580

PREPARING US FOR THOSE FUTURE  
LONG DURATION MISSIONS.

26

00:01:12,400 --> 00:01:14,500

THIS WEEK THE CREW  
TOOK ULTRASOUND IMAGES

27

00:01:14,500 --> 00:01:16,160

OF VARIOUS BLOOD VESSELS AS PART

28

00:01:16,166 --> 00:01:18,046

OF THE FLUID SHIFTS  
INVESTIGATION.

29

00:01:18,400 --> 00:01:20,960

BECAUSE FLUIDS SHIFT  
HEADWARD IN MICROGRAVITY

30

00:01:20,960 --> 00:01:23,740

AND MAY CAUSE ADVERSE EFFECTS  
LIKE CHANGES IN EYESIGHT,

31

00:01:23,740 --> 00:01:26,480

A LOWER BODY NEGATIVE  
PRESSURE DEVICE IS WORN

32

00:01:26,480 --> 00:01:28,720  
TO INVESTIGATE POSSIBLE  
PREVENTATIVE MEASURES.

33

00:01:29,380 --> 00:01:31,580  
THE CREW ALSO COLLECTED  
URINE AND BLOOD SAMPLES

34

00:01:31,580 --> 00:01:35,476  
FOR THREE OTHER INVESTIGATIONS  
- BIOCHEM PROFILE, REPOSITORY,

35

00:01:35,476 --> 00:01:36,776  
AND CARDIO OX - AIMED

36

00:01:36,776 --> 00:01:39,476  
AT MEASURING HOW DIFFERENT  
BIOLOGICAL SYSTEMS COMPARE

37

00:01:39,480 --> 00:01:41,640  
BEFORE, DURING, AND  
AFTER SPACEFLIGHT.

38

00:01:42,560 --> 00:01:44,580  
THIS WEEK'S QUESTION  
COMES FROM PADDY C

39

00:01:44,580 --> 00:01:47,520  
WHO SAYS MY DAUGHTER WANTS TO  
KNOW WHY THE ASTRONAUTS LAND

40

00:01:47,520 --> 00:01:49,080  
IN THE WATER AFTER THEY  
COME BACK FROM SPACE.

41

00:01:49,740 --> 00:01:52,180  
THERE ARE ACTUALLY MANY  
DIFFERENT LANDING OPTIONS.

42

00:01:52,416 --> 00:01:54,416  
THE SPACE SHUTTLE LANDED  
LIKE A PLANE ON A RUNWAY,

43

00:01:54,416 --> 00:01:56,026  
THE APOLLO CAPSULE  
LANDED IN WATER,

44

00:01:56,026 --> 00:01:58,246  
AND THE ORION SPACECRAFT  
WILL TOO.

45

00:01:58,346 --> 00:02:00,606  
HOWEVER, ASTRONAUTS CURRENTLY  
TRAVEL BACK AND FORTH

46

00:02:00,606 --> 00:02:02,880  
TO THE SPACE STATION  
ABOARD THE SOYUZ VEHICLE,

47

00:02:02,880 --> 00:02:04,080  
WHICH TOUCHES DOWN ON LAND.

48

00:02:04,480 --> 00:02:06,620  
THERE ARE PROS AND CONS  
TO ALL THE METHODS.

49

00:02:06,620 --> 00:02:09,960  
MANY FACTORS ARE CONSIDERED SUCH  
AS OBSTACLES LIKE LANDFORMS,

50

00:02:09,960 --> 00:02:12,686  
HOW POPULATED THE AREA  
IS, WHO HAS JURISDICTION

51

00:02:12,686 --> 00:02:13,800  
OVER THE SURROUNDING AREAS,

52

00:02:13,800 --> 00:02:16,280  
AND HOW FIT THE CREW IS

TO ASSIST THEMSELVES.

53

00:02:16,556 --> 00:02:18,746  
THE VAST OPEN LAND  
IN THE STEPPES

54

00:02:18,746 --> 00:02:21,700  
OF KAZAKHSTAN OFFERS AN  
OPPORTUNITY FOR RECOVERY CREWS

55

00:02:21,700 --> 00:02:23,766  
TO QUICKLY REACH THE  
CREW AND ASSIST THEM

56

00:02:23,766 --> 00:02:24,926  
WITH EXITING THE VEHICLE.

57

00:02:25,426 --> 00:02:28,176  
AFTER MORE THAN 6 MONTHS  
IN SPACE, IT TAKES TIME

58

00:02:28,176 --> 00:02:29,906  
FOR THEIR BODIES TO  
READJUST TO GRAVITY.

59

00:02:30,286 --> 00:02:32,796  
RESEARCH GAINED FROM ALL THESE  
METHODS WILL BE PUT TO USE

60

00:02:32,796 --> 00:02:35,306  
IN FUTURE MISSIONS TO THE  
MOON, MARS, AND BEYOND.

61

00:02:36,320 --> 00:02:38,780  
KEEP SENDING YOUR  
QUESTIONS USING THE HASHTAG