

A photograph of a Space Shuttle launching, viewed from a low angle. The shuttle is positioned vertically in the center, with a large, bright plume of fire and white smoke trailing behind it. The background is dark, making the bright launch plume stand out. The shuttle's external tank and solid rocket boosters are visible. The launch is taking place at night or in low light conditions.

Space **to** Ground

1
00:00:04,460 --> 00:00:08,280
"WE HAVE A LIFTOFF OF THE
H-IIB LAUNCH VEHICLE NUMBER 7

2
00:00:08,346 --> 00:00:09,986
WITH KOUNOTORI 7 ABOARD,

3
00:00:10,596 --> 00:00:13,026
FROM THE JAXA TANEGASHIMA
SPACE CENTER."

4
00:00:13,866 --> 00:00:16,016
WELCOME TO SPACE TO
GROUND, I'M ISIDRO REYNA.

5
00:00:16,436 --> 00:00:19,776
THIS WEEK, THE JAPANESE
HTV-7 CARGO VEHICLE ARRIVED

6
00:00:19,776 --> 00:00:21,326
AT THE INTERNATIONAL
SPACE STATION.

7
00:00:22,436 --> 00:00:25,136
THE SUPPLY SHIP LAUNCHED
SATURDAY, SEPTEMBER 22ND

8
00:00:25,136 --> 00:00:28,216
FROM JAPAN, LOADED WITH MORE
THAN FIVE TONS OF NEW SCIENCE

9
00:00:28,216 --> 00:00:30,096
AND SUPPLIES DESTINED
FOR THE CREW.

10
00:00:30,576 --> 00:00:32,846
THE VEHICLE WAS CAPTURED
BY ASTRONAUTS ON STATION

11

00:00:32,846 --> 00:00:35,066
ON THURSDAY, SEPTEMBER 27TH.

12

00:00:35,066 --> 00:00:37,336
IN THE VEHICLE WERE SPARE
PARTS AND EXPERIMENTS,

13

00:00:37,336 --> 00:00:40,346
INCLUDING AN INVESTIGATION
INTO THE EFFECT OF MICROGRAVITY

14

00:00:40,346 --> 00:00:43,056
ON BONE MARROW AND NEW
BATTERIES FOR THE SPACE STATION.

15

00:00:43,586 --> 00:00:47,176
ONE OF THE CRITICAL PAYLOADS
INSIDE THE HTV-7 WAS THE LIFE

16

00:00:47,176 --> 00:00:48,416
SCIENCES GLOVEBOX.

17

00:00:49,266 --> 00:00:52,326
THE NEW FACILITY WILL ENABLE
RESEARCH TO ADVANCE HUMAN HEALTH

18

00:00:52,326 --> 00:00:53,696
ON EARTH AND IN SPACE.

19

00:00:54,156 --> 00:00:56,036
ROUGHLY THE SIZE OF
A LARGE FISH TANK,

20

00:00:56,276 --> 00:00:59,436
THE LIFE SCIENCES GLOVEBOX IS
OFFICIALLY THE LARGEST FLIGHT

21

00:00:59,436 --> 00:01:02,296
HARDWARE EVER LAUNCHED IN A
"SOFT-STOWED" CONFIGURATION,

22

00:01:02,426 --> 00:01:05,286

IN WHICH THE EQUIPMENT IS PACKED
SECURELY IN PROTECTIVE FOAM.

23

00:01:05,906 --> 00:01:08,736

THE GLOVEBOX WILL BE TRANSFERRED
IN THE JAPANESE "KIBO" MODULE,

24

00:01:08,886 --> 00:01:10,936

WHERE UP TO TWO CREW
MEMBERS CAN CONDUCT ONE

25

00:01:10,936 --> 00:01:12,776

OR MORE EXPERIMENTS
SIMULTANEOUSLY.

26

00:01:13,156 --> 00:01:16,176

THIS VERSATILE FACILITY NOT
ONLY WILL HELP US BETTER PROTECT

27

00:01:16,176 --> 00:01:18,686

HUMAN EXPLORERS ON LONG
VOYAGES INTO DEEP SPACE,

28

00:01:18,946 --> 00:01:20,546

BUT IT ALSO COULD AID MEDICAL

29

00:01:20,660 --> 00:01:23,500

AND SCIENTIFIC ADVANCES
BENEFITING THE WHOLE WORLD.

30

00:01:24,740 --> 00:01:25,240

"ARE YOU READY?"

31

00:01:25,240 --> 00:01:26,120

"READY!"

32

00:01:26,740 --> 00:01:27,640

"LOOK AT THE HORIZON."

33

00:01:27,980 --> 00:01:28,580

"I'M LOOKING!"

34

00:01:31,020 --> 00:01:34,940

NASA'S JOSH CASSADA AND BOEING
ASTRONAUT CHRIS FERGUSON WENT

35

00:01:34,946 --> 00:01:36,416

THROUGH WATER SURVIVAL TRAINING

36

00:01:36,416 --> 00:01:38,376

AT NASA'S NEUTRAL
BUOYANCY LABORATORY,

37

00:01:38,806 --> 00:01:40,726

THIS IS JUST ONE
FORM OF PREPARATION

38

00:01:41,046 --> 00:01:43,626

AS ASTRONAUTS TRAIN TOWARDS
THE FIRST CREWED LAUNCHES

39

00:01:43,626 --> 00:01:45,666

ON SPACECRAFT FROM
BOEING AND SPACEX.

40

00:01:46,106 --> 00:01:49,936

AS ALWAYS, HEAD OVER TO
NASA.GOV/COMMERCIALCREW FOR ALL

41

00:01:49,936 --> 00:01:52,296

OF THE LATEST UPDATES FROM
THIS EXCITING NEW CHAPTER

42

00:01:52,296 --> 00:01:53,176

IN HUMAN SPACEFLIGHT.

43

00:01:54,006 --> 00:01:56,016
THIS WEEK'S QUESTION
IS ABOUT COMMUNICATION.

44
00:01:56,266 --> 00:01:59,246
AMELIA ASKS, HOW OFTEN DO
THE ASTRONAUTS HAVE CONTACT

45
00:01:59,246 --> 00:02:01,866
WITH THEIR FAMILY OR FRIENDS
-- AND IS IT COMPLICATED?

46
00:02:02,436 --> 00:02:05,376
COMMUNICATIONS BETWEEN SPACE
AND EARTH HAVE IMPROVED GREATLY

47
00:02:05,376 --> 00:02:06,576
IN THE YEARS SINCE APOLLO,

48
00:02:06,806 --> 00:02:09,146
MIR AND EVEN THE EARLY
MONTHS OF THE SPACE STATION.

49
00:02:09,486 --> 00:02:12,886
BACK THEN, ASTRONAUTS COULDN'T
CONTACT THEIR FAMILIES EASILY.

50
00:02:13,246 --> 00:02:15,806
TODAY, DURING THEIR FREE
TIME, THEY HAVE ACCESS

51
00:02:15,806 --> 00:02:17,556
TO AN INTERNET PROTOCOL
TELEPHONE.

52
00:02:17,866 --> 00:02:20,916
TO USE THIS, THEY CAN DIAL A
NUMBER ON A LAPTOP COMPUTER,

53
00:02:21,046 --> 00:02:23,276

AND WITH THE HELP OF AN
ANTENNA AND SATELLITE SYSTEM,

54

00:02:23,586 --> 00:02:25,386
THEY CAN SPEAK DIRECTLY
WITH THEIR FAMILIES.

55

00:02:25,746 --> 00:02:27,536
THEY CAN ALSO SEND
MESSAGES BY E-MAIL.

56

00:02:28,286 --> 00:02:31,206
KEEP SENDING IN YOUR QUESTIONS
USING THE HASHTAG SPACETOGROUND,

57

00:02:31,486 --> 00:02:33,566
AND TUNE IN TO NASA TV ON OCT.

58

00:02:33,666 --> 00:02:36,666
2, AS WE WRAP UP THE YEAR
OF EDUCATION ON STATION!

59

00:02:37,476 --> 00:02:40,546
WATCH ASTRONAUT AND FORMER
CLASSROOM TEACHER RICKY ARNOLD

60

00:02:40,546 --> 00:02:43,516
ANSWER QUESTIONS ON SOCIAL
MEDIA USING THE HASHTAG