1
00:00:00,000 --> 00:00:01,000
\h

2
00:00:01,500 --> 00:00:02,500
Music

3
00:00:07,320 --> 00:00:08,593
Bathed in a blaze of xenon lights, space shuttle Discovery waited in the early morning

4
00:00:11,780 --> 00:00:16,380
darkness on Launch Pad 39A at NASA's Kennedy Space Center in Florida,

5
00:00:17,140 --> 00:00:22,140
ready to liftoff on the STS-131 mission to the International Space Station.

6
00:00:23,230 --> 00:00:26,896
Discovery's crew, under the command of Alan Poindexter,

7
00:00:27,040 --> 00:00:27,980
strode out of the Operations and Checkout Building, greeted with cheers and whistles

8
00:00:31,700 --> 00:00:32,310
from bystanders wishing them well on their journey.

9
00:00:34,490 --> 00:00:38,356
Waving back, the astronauts climbed aboard NASA's Astrovan

10
00:00:39,880 --> 00:00:41,880
for the short ride to the pad.

11
00:00:42,250 --> 00:00:47,250
At 6:21 a.m. Eastern on April 5, 2010, Discovery roared off the launch pad.

12
00:00:50,380 --> 00:00:52,179
Mike Curie/STS-131 Launch Commentator: And liftoff of Discovery,

13
00:00:52,180 --> 00:00:56,380

blazing a trail to scientific discoveries aboard space station.

14
00:00:56,740 --> 00:00:56,846
Within minutes, the twin solid rocket boosters and external fuel tank fell away

15
00:01:01,900 --> 00:01:03,900
as the shuttle attained orbit.

16
00:01:04,180 --> 00:01:09,580
Once there, the Ku-band antenna system, which sends high-rate data communications

17
00:01:09,710 --> 00:01:09,760
down to Earth, failed to work, requiring the astronauts and ground crews to do

18
00:01:14,860 --> 00:01:19,860
a little problem-solving by eventually using the space station's Ku system.

19
00:01:19,980 --> 00:01:20,123
After a two-day chase and the space station in sight,

20
00:01:23,370 --> 00:01:24,116
Discovery went through its backflip maneuver, enabling the station crew to photograph

21
00:01:28,290 --> 00:01:28,796
the heat shield on the shuttle's underside.

22
00:01:30,650 --> 00:01:31,553
Once Poindexter and Pilot Jim Dutton docked the shuttle to the station,

23
00:01:34,480 --> 00:01:34,830
the hatches between the two spacecraft were opened.

24
00:01:37,530 --> 00:01:37,903
The arrival brought together a combined crew of 13 and a first for any mission as four

25
00:01:42,890 --> 00:01:45,556
women astronauts flew together in space.

26
00:01:45,820 --> 00:01:46,456
They were Mission Specialists Dottie Metcalf-Lindenburger,

27
00:01:49,050 --> 00:01:50,183
Stephanie Wilson,

28
00:01:51,080 --> 00:01:54,813
Naoko Yamazaki of the Japan Aerospace Exploration Agency

29
00:01:55,720 --> 00:01:59,386
and Expedition 23 Flight Engineer Tracy Caldwell Dyson.

30
00:02:00,610 --> 00:02:06,010
Discovery's primary payload was a multi-purpose logistics module called Leonardo,

31
00:02:06,260 --> 00:02:10,460
filled with 17,000 pounds of scientific equipment and supplies.

32
00:02:11,770 --> 00:02:16,503
Using the space station's robotic arm, operated by Wilson and Yamazaki,

33
00:02:17,310 --> 00:02:18,246
Leonardo was lifted out of the shuttle's cargo bay and connected to the Harmony node.

34
00:02:22,040 --> 00:02:22,070
After staying in the Quest Airlock overnight,

35
00:02:25,010 --> 00:02:30,210
Mission Specialists Rick Mastracchio and Clay Anderson moved a new 1,700-pound

36
00:02:30,500 --> 00:02:30,613
ammonia tank from Discovery's cargo bay to a temporary parking place on the station

37
00:02:35,920 --> 00:02:38,720
as part of their first spacewalking tasks.

38
00:02:39,360 --> 00:02:39,873

A few technical issues, such as uncooperative bolts and a malfunctioning nitrogen tank

39
00:02:44,580 --> 00:02:49,046
assembly, kept the spacewalkers busy.
Meanwhile, inside the station,

40
00:02:50,750 --> 00:02:56,216
Yamazaki and Expedition 23 Flight Engineer Soichi Noguchi began transferring cargo

41
00:02:56,870 --> 00:02:57,050
from Leonardo to their respective stowage areas,

42
00:02:59,890 --> 00:03:03,223
with slow and intricately choreographed movements.

43
00:03:03,230 --> 00:03:03,460
Mastracchio and Anderson completed the third and last of the complex spacewalking

44
00:03:08,400 --> 00:03:08,896
assignments, in addition to some get-ahead tasks for space shuttle Atlantis'

45
00:03:12,970 --> 00:03:14,636
upcoming STS-132 mission.

46
00:03:16,650 --> 00:03:22,250
Because of the Ku-band antenna issue, an extra day was added to the mission to allow

47
00:03:22,740 --> 00:03:23,776
crew members to perform a final check of Discovery's heat shield before they undocked

48
00:03:27,370 --> 00:03:28,503
from the station.

49
00:03:29,450 --> 00:03:30,206
Morning fog and showers near Kennedy's Shuttle Landing Facility tacked on one more

50
00:03:34,160 --> 00:03:35,426
day to the mission.

51
00:03:36,930 --> 00:03:42,463
Then on April 20, 2010, the weather cooperated and Discovery made a picture-perfect

52
00:03:42,820 --> 00:03:47,486
touchdown at 9:08 a.m. Eastern on Runway 33 after completing a 15-day,

53
00:03:48,920 --> 00:03:50,586
6.2-million-mile mission.

54
00:03:52,010 --> 00:03:54,006
Brandy Dean/STS-131 Landing Commentator: Nose gear touchdown.

55
00:03:54,080 --> 00:03:54,213
That brings an end to the STS-131 mission, the 131st space shuttle flight and the 33rd to

56
00:03:59,880 --> 00:03:59,883
the International Space Station.

57
00:04:02,010 --> 00:04:04,489
Alan Poindexter/STS-131 Commander: It’s great to be back at the Kennedy Space Center

58
00:04:04,490 --> 00:04:04,980
with Discovery. It was a beautiful entry this morning.

59
00:04:07,600 --> 00:04:10,169
Clay Anderson/STS-131 Mission Specialist: We had a lot of adversity, but we overcame

60
00:04:10,170 --> 00:04:10,873
it all with some great teamwork.

61
00:04:11,600 --> 00:04:11,713
With a successful mission behind them,

62
00:04:14,020 --> 00:04:15,083
the Discovery crew returned to NASA's Johnson Space Center in Houston where they