



1  
00:00:00,000 --> 00:00:02,230

LADEE Mission Control: All stations, this is

2  
00:00:02,250 --> 00:00:05,780

LADEE mission on Ops. All criteria for LADEE

3  
00:00:05,800 --> 00:00:09,390

impact verification have been met. Operating

4  
00:00:09,410 --> 00:00:12,000

LADEE was the definition of a team effort and all

5  
00:00:12,020 --> 00:00:13,780

of you should be extremely proud of our collective

6  
00:00:13,800 --> 00:00:16,470

accomplishment. And so with that, Flight, you are

7  
00:00:16,490 --> 00:00:19,050

"Go!" to close out LADEE mission operations.

8  
00:00:19,070 --> 00:00:21,740

Narrator: With those words, NASA's LADEE mission

9  
00:00:21,760 --> 00:00:24,440

came to an end as the spacecraft spacecraft executed

10  
00:00:24,460 --> 00:00:27,010

a planned de-orbit into the surface of the Moon

11  
00:00:27,030 --> 00:00:30,810

at nearly three thousand, six hundred miles per hour.

12  
00:00:30,830 --> 00:00:33,270

Butler Hine: We spent all of our fuel going after

13  
00:00:33,290 --> 00:00:35,470

the really valuable low-altitude science,

14

00:00:35,490 --> 00:00:38,500

which means you have nothing left, so you can't go back up.

15

00:00:38,520 --> 00:00:40,390

And the moon's gravity field is so lumpy that

16

00:00:40,410 --> 00:00:43,060

eventually, you'll wander around to a point where

17

00:00:43,080 --> 00:00:45,450

you impact. It's a trade. You go as low as you

18

00:00:45,470 --> 00:00:48,630

can to get the science and then, the price you pay

19

00:00:48,650 --> 00:00:51,060

is eventually you have to impact.

20

00:00:51,080 --> 00:00:53,170

Narrator: At every milestone, the LADEE spacecraft

21

00:00:53,190 --> 00:00:55,630

and team performed well and achieved all of their

22

00:00:55,650 --> 00:00:57,570

goals for the mission.

23

00:00:57,590 --> 00:00:59,680

Instrument testing and data collection went

24

00:00:59,700 --> 00:01:02,060

extremely well throughout the mission,

25

00:01:02,080 --> 00:01:06,320

originally planned for a total of 160 days.

26  
00:01:06,340 --> 00:01:08,690  
Efficient management of the spacecraft's fuel

27  
00:01:08,710 --> 00:01:10,910  
resources allowed the mission to continue

28  
00:01:10,930 --> 00:01:14,370  
collecting data into April of this year.

29  
00:01:14,390 --> 00:01:17,520  
After descending to its final orbital altitude,

30  
00:01:17,540 --> 00:01:20,760  
LADEE completed more than 100 orbits of the Moon

31  
00:01:20,780 --> 00:01:23,870  
at extremely low altitude, giving the science team

32  
00:01:23,890 --> 00:01:26,160  
a unique opportunity to collect data above the

33  
00:01:26,180 --> 00:01:27,890  
lunar surface.

34  
00:01:27,910 --> 00:01:30,480  
About the size of a large vending machine, LADEE

35  
00:01:30,500 --> 00:01:32,570  
was designed and built at NASA's Ames Research

36  
00:01:32,590 --> 00:01:35,760  
Center at Moffett Field, California.

37  
00:01:35,780 --> 00:01:39,230  
NASA Mission Control: 2...1...zero...ignition...

38  
00:01:39,250 --> 00:01:40,800

(Roar of rocket engines)

39

00:01:40,820 --> 00:01:42,470

NASA Mission Control: and liftoff of the

40

00:01:42,490 --> 00:01:44,260

Minotaur Five with LADEE.

41

00:01:44,280 --> 00:01:46,830

Narrator: Launched in September 2013 from NASA's

42

00:01:46,850 --> 00:01:49,910

Wallops Flight Facility in Virginia, LADEE began

43

00:01:49,930 --> 00:01:52,860

orbiting the moon on October 6 and gathering

44

00:01:52,880 --> 00:01:55,650

science data on November 10.

45

00:01:55,670 --> 00:01:57,600

The primary goal of the mission was to collect

46

00:01:57,620 --> 00:02:00,150

data about the thin lunar atmosphere and the

47

00:02:00,170 --> 00:02:02,270

amounts of dust that are in it at multiple

48

00:02:02,290 --> 00:02:04,030

altitudes.

49

00:02:04,050 --> 00:02:05,970

Rick Elphic: At higher altitudes, we saw very few

50

00:02:05,990 --> 00:02:08,430

dust particle impacts. But the lower we went

51  
00:02:08,450 --> 00:02:10,790  
with LADEE, the more we saw. And it's a very,

52  
00:02:10,810 --> 00:02:13,600  
very steep rise. So if you're operating

53  
00:02:13,620 --> 00:02:15,560  
with spacecraft very close to the surface

54  
00:02:15,580 --> 00:02:18,480  
of the moon, as you would with a robotic lander

55  
00:02:18,500 --> 00:02:22,100  
or a human lander, you might need to consider

56  
00:02:22,120 --> 00:02:24,040  
the fact that you've got more dust there

57  
00:02:24,060 --> 00:02:26,440  
in the way, as you come in.

58  
00:02:26,460 --> 00:02:28,350  
Narrator: While the spacecraft has finished its

59  
00:02:28,370 --> 00:02:31,470  
job, the LADEE science team is busy working with

60  
00:02:31,490 --> 00:02:33,930  
their data and hope to announce their discoveries

61  
00:02:33,950 --> 00:02:36,870  
within the next few months.