1
00:00:08,300 --> 00:00:04,130
[silence]

2
00:00:08,320 --> 00:00:12,470
[music] Narrator: On October 9, 2009, a Centaur rocket impacted the Moon, followed

3
00:00:12,490 --> 00:00:16,650
soon by NASA's LCROSS spacecraft. NASA's Lunar Reconnaissance Orbiter

4
00:00:16,670 --> 00:00:20,750
was there, both to help pick the location of the impact, and to observe the resulting debris and

5
00:00:20,770 --> 00:00:24,850
vapor cloud. First, an impact site had to be selected. Data from

6
00:00:24,870 --> 00:00:28,920
LRO's LEND and Diviner instruments helped pick a good location--LEND to find a

7
00:00:28,940 --> 00:00:33,080
probable source of hydrogen, and Diviner to pick a cold, permanently shadowed region likely

8
00:00:33,100 --> 00:00:37,130
to contain certain volatiles. Once the impact occurred, these same instruments,

9
00:00:37,150 --> 00:00:41,180
along with LRO's LAMP instrument, observed the impact. LAMP revealed the

10
00:00:41,200 --> 00:00:45,210
presence of molecular hydrogen, carbon monoxide, and other materials,

11
00:00:45,230 --> 00:00:49,240
Diviner measured a noticeable change in thermal radiation coming from the site, and LEND

12
00:00:49,260 --> 00:00:53,420
reported the presence of hydrogen. All in all, these results both complement

13
00:00:53,440 --> 00:00:57,590

LCROSS findings and pave the way for future study of Earth's own satellite.

14
00:00:57,610 --> 00:01:01,730
[music]

15
00:01:01,750 --> 00:01:05,930
[beeping]