1
00:00:00,200 --> 00:00:02,200
[Music]

2
00:00:02,200 --> 00:00:04,133
In order for NASA to map and explore

3
00:00:04,133 --> 00:00:06,566
the region around the lunar South Pole,

4
00:00:06,566 --> 00:00:08,566
we need to precisely define a system of

5
00:00:08,566 --> 00:00:10,833
latitude and longitude on the Moon,

6
00:00:10,833 --> 00:00:14,300
including the exact location of the South Pole itself.

7
00:00:15,666 --> 00:00:16,733
In the coordinate system

8
00:00:16,733 --> 00:00:19,566
adopted by the Lunar Reconnaissance Orbiter mission,

9
00:00:19,566 --> 00:00:21,266
the South Pole is here,

10
00:00:21,266 --> 00:00:23,766
on the rugged rim of Shackleton crater.

11
00:00:28,033 --> 00:00:30,100
If you stood on this treacherous spot,

12
00:00:30,100 --> 00:00:32,166
you'd see the sunlit rim of the crater,

13
00:00:32,166 --> 00:00:34,466

encircling a permanently shadowed abyss

14
00:00:34,466 --> 00:00:36,400
that’s two and a half miles deep,

15
00:00:36,400 --> 00:00:38,600
over twice that of the Grand Canyon,

16
00:00:38,600 --> 00:00:41,600
covering an area over 130 square miles.

17
00:00:43,700 --> 00:00:45,866
As we return to the lunar surface,

18
00:00:45,866 --> 00:00:47,166
three dimensional maps like this

19
00:00:47,166 --> 00:00:49,933
will help guide astronauts to safe landing sites