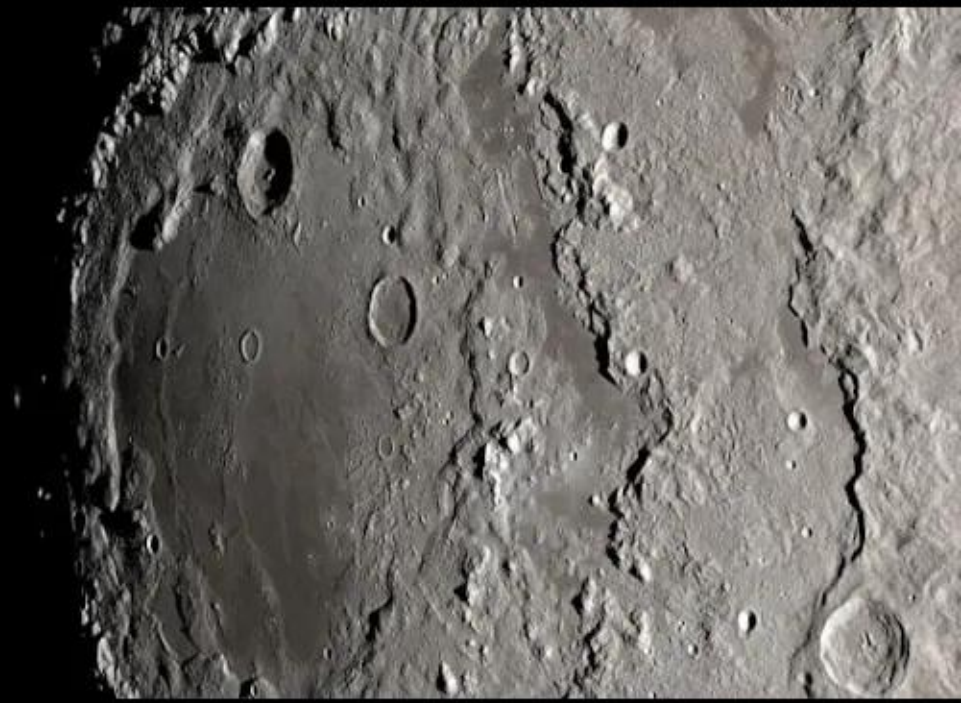

1
00:00:01,133 --> 00:00:05,566
Hi! I’m Noah Petro, the Project Scientist for the Lunar Reconnaissance Orbiter -

2
00:00:05,566 --> 00:00:08,300
a spacecraft has been orbiting the Moon for over a decade,

3
00:00:08,300 --> 00:00:11,133
paving the way for humans to return to the surface.

4
00:00:11,133 --> 00:00:13,500
As a scientist, I get excited about the amount of data

5
00:00:13,500 --> 00:00:15,433
that we’ve been able to collect on the Moon.

6
00:00:15,433 --> 00:00:17,866
We now know more about its geological history,

7
00:00:17,866 --> 00:00:20,766
its chemistry and topography, than ever before.

8
00:00:20,766 --> 00:00:24,433
But to me, the data also shows something beyond the science we've investigated:

9
00:00:24,433 --> 00:00:25,700
its beauty.

10
00:00:25,700 --> 00:00:29,733
The visulizations you're about to see not only hold important scientific value,

11
00:00:29,733 --> 00:00:31,566
but artistic value as well.

12
00:00:31,566 --> 00:00:35,633
These moonscapes have a fascinating story to tell, and I hope it’s one that you enjoy

13
00:00:38,366 --> 00:00:39,933

[Music]

14
00:00:39,933 --> 00:00:46,100
The Moon is our nearest neighbor. Our nightlight. It’s also our memory.

15
00:00:46,100 --> 00:00:50,600
While wind, water, and molten rock erase Earth’s deep history,

16
00:00:50,600 --> 00:00:54,566
the Moon remembers everything that has happened in the last four and a half billion years.

17
00:00:57,700 --> 00:01:01,766
The impact that formed the Orientale basin provides a window to understanding

18
00:01:01,766 --> 00:01:06,366
how similar large events on other planets and moons have shaped their landscapes.

19
00:01:13,600 --> 00:01:17,466
The discovery of water on the sunlit surface of Clavius crater

20
00:01:17,466 --> 00:01:21,666
not only unlocks new possibilities for future lunar exploration,

21
00:01:21,666 --> 00:01:26,800
but also our understanding of where the ingredients of life could exist in our vast universe.

22
00:01:42,166 --> 00:01:47,000
The steep trenches and cracked surface of Komarov crater on the farside

23
00:01:47,000 --> 00:01:51,633
tell a story of the ancient volcanic activity from the Moon’s interior,

24
00:01:51,633 --> 00:01:55,933
revealing the history of geological forces carving the lunar terrain through time.

25
00:02:09,300 --> 00:02:15,366
Traversing the landscape we can see a beautiful tapestry of ridges, valleys and mountains –

26
00:02:15,366 --> 00:02:18,600
best encapsulated by the view of Tycho crater.

27
00:02:20,466 --> 00:02:24,900
The summit of its central peak stands nearly 3 miles above the crater floor.

28
00:02:24,900 --> 00:02:28,500
A visual metaphor for the steep challenges but exciting rewards

29
00:02:28,500 --> 00:02:30,600
that await us on the Moon and beyond.

30
00:02:36,166 --> 00:02:41,066
And on the lunar horizon, the most consequential view of all –

31
00:02:41,066 --> 00:02:42,233
our home.

32
00:02:42,233 --> 00:02:44,733
To study the Moon is to study ourselves –

33
00:02:44,733 --> 00:02:48,033
our past, our present, and our future.

34
00:02:48,033 --> 00:02:51,600
Each new discovery bringing us from darkness into light.

35
00:02:54,266 --> 00:02:56,700
The gravitational forces between the Earth and Moon