1
00:00:00,667 --> 00:00:04,938
Before NASA’s Artemis astronauts go to the Moon,

2
00:00:04,938 --> 00:00:09,609
a small spacecraft called CAPSTONE will help lead the way.

3
00:00:09,709 --> 00:00:16,216
The Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment

4
00:00:16,216 --> 00:00:20,687
will test a unique lunar orbit that has never been flown before.

5
00:00:21,454 --> 00:00:24,924
This orbit will be home for NASA’s Gateway...

6
00:00:24,924 --> 00:00:31,031
the future space outpost that will support visiting astronauts on their way to the Moon and beyond.

7
00:00:31,698 --> 00:00:37,637
To help prepare for Gateway operations in this orbit, CAPSTONE will fly the path first.

8
00:00:38,772 --> 00:00:43,476
The mission will be led by small business partner Advanced Space.

9
00:00:44,077 --> 00:00:47,547
Rocket Lab will launch the spacecraft.

10
00:00:47,747 --> 00:00:53,253
The gravities of Earth, the Sun, and the Moon will help propel it into deep space.

11
00:00:53,953 --> 00:01:01,861
As it nears its destination, CAPSTONE will use its propulsion system
to enter an elongated path around the Moon.

12
00:01:02,262 --> 00:01:08,635
The spacecraft will orbit between the gravities of Earth and the Moon in a precisely balanced dance.

13

00:01:09,069 --> 00:01:16,242
For six months, it will gather data about this crown-shaped trajectory known as a near rectilinear halo orbit.

14
00:01:17,377 --> 00:01:22,148
The path provides an unobstructed view of Earth as it orbits the Moon’s poles.

15
00:01:22,582 --> 00:01:27,153
and allows for continuous communications with ground-based control centers.

16
00:01:27,520 --> 00:01:32,158
CAPSTONE will also demonstrate a new onboard navigation system.

17
00:01:32,959 --> 00:01:39,299
It will communicate with NASA’s Moon observing Lunar Reconnaissance Orbiter satellite to calculate its positio

18
00:01:39,833 --> 00:01:47,440
The technology could allow future spacecraft to pinpoint their location without having to entirely rely on tracking