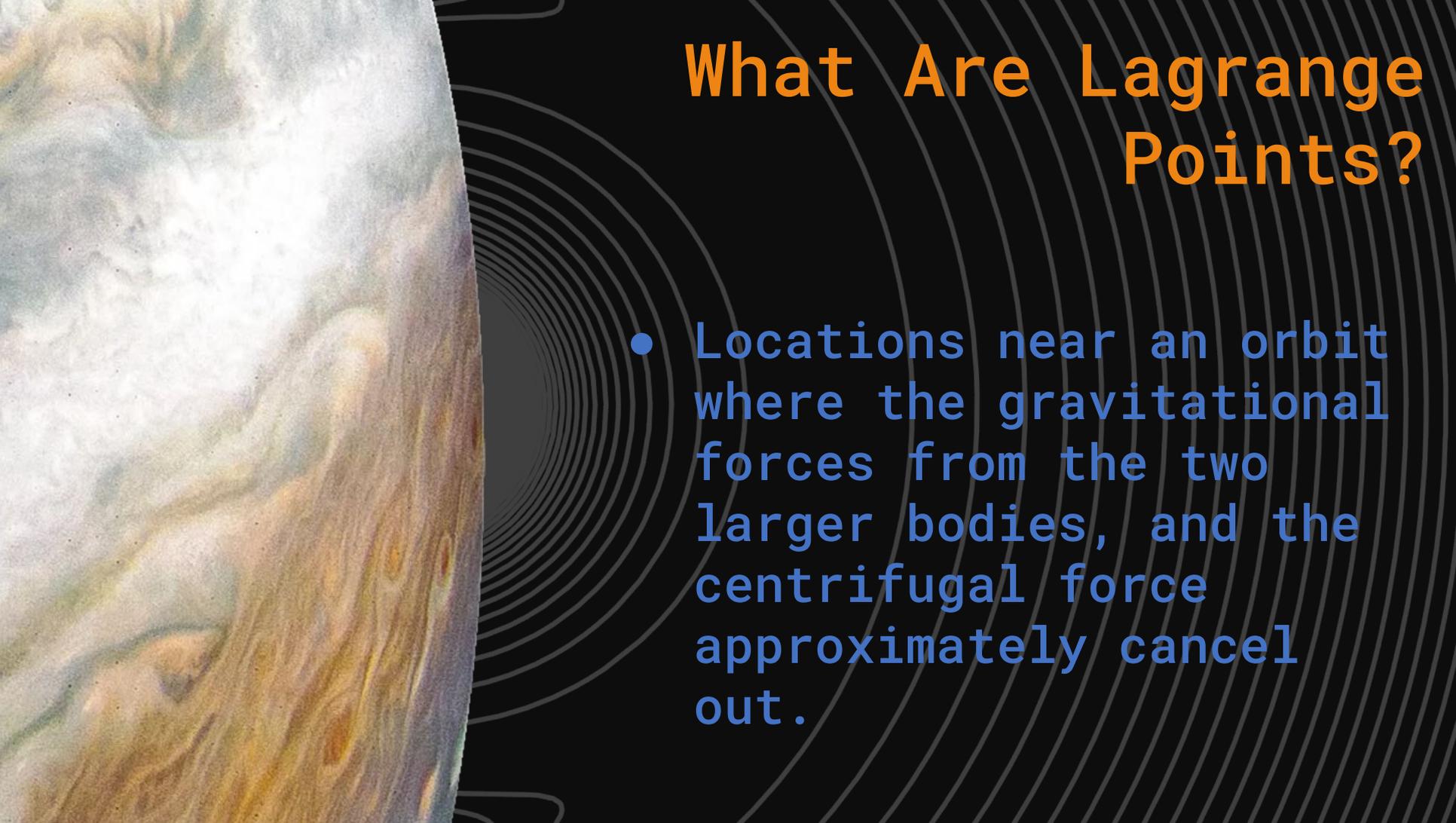


Simulating the Orbital Dynamics of Lagrange Points

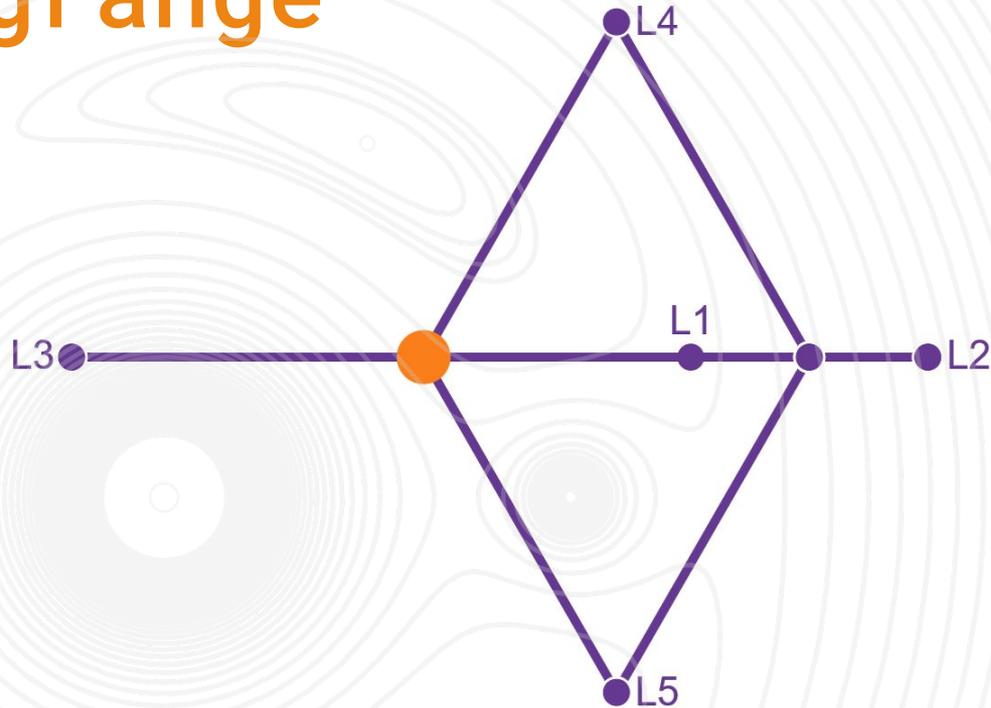
Xavier Schrage

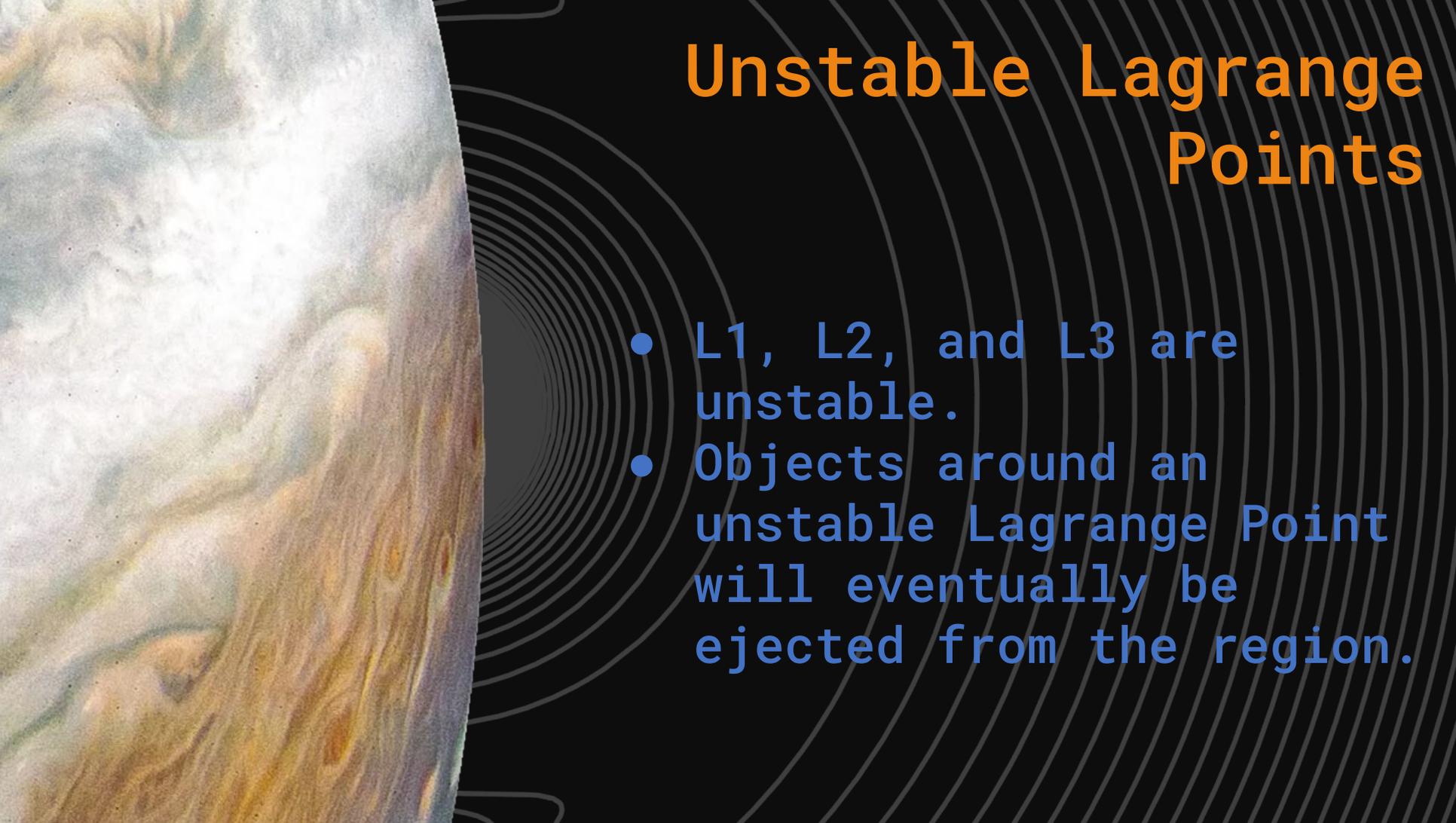
The image is a composite. On the left side, there is a vertical strip showing a close-up of a planet's surface, likely Jupiter, with its characteristic orange, white, and brown swirling cloud patterns. On the right side, the background is black with a series of concentric white circles that create a tunnel-like or ripple effect, suggesting orbital paths or gravitational fields.

What Are Lagrange Points?

- Locations near an orbit where the gravitational forces from the two larger bodies, and the centrifugal force approximately cancel out.

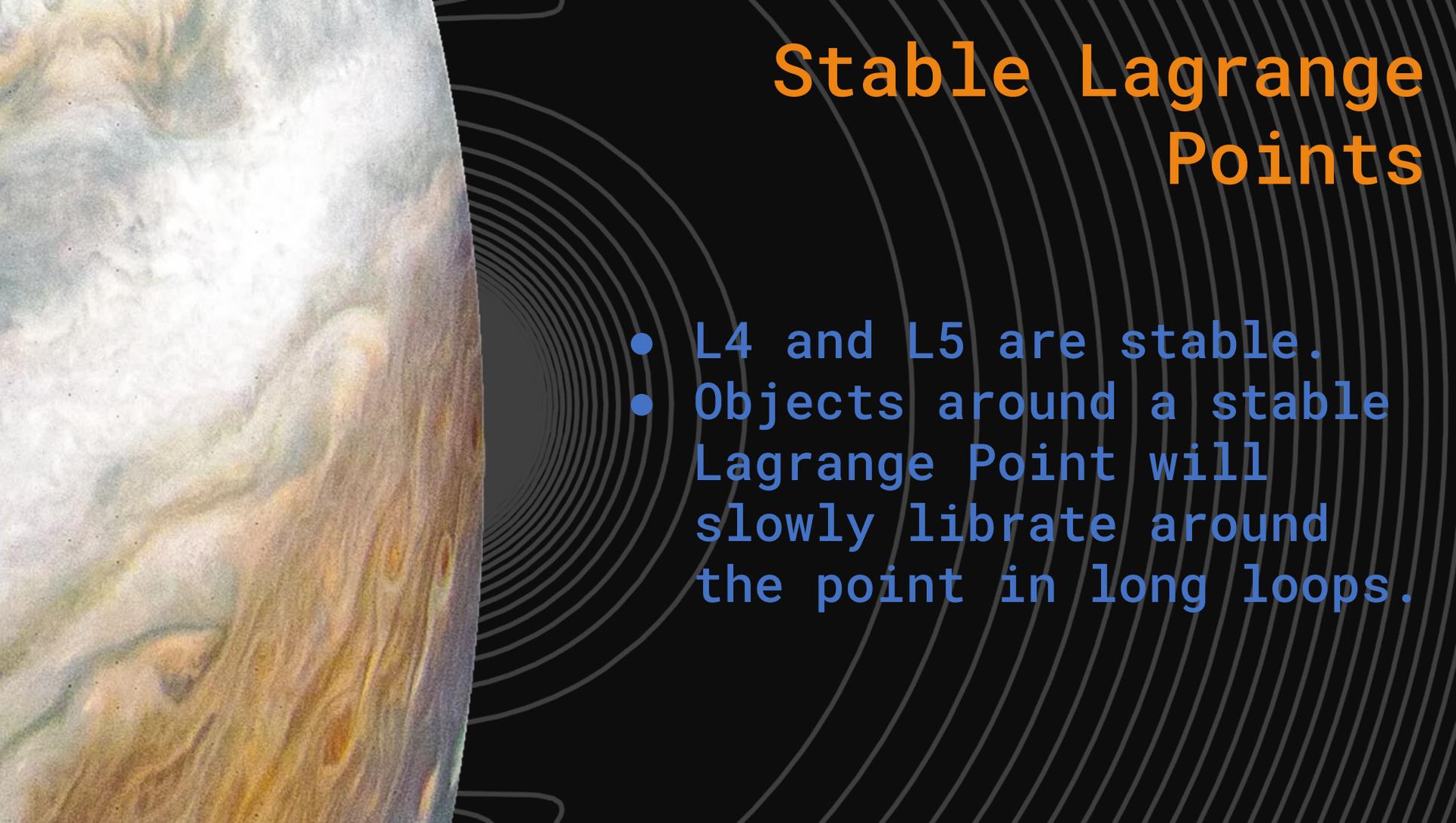
Where Are Lagrange Points?



The image is a composite. On the left side, there is a vertical strip showing a close-up of a planet's surface, likely Jupiter, with its characteristic swirling cloud patterns in shades of white, yellow, and brown. On the right side, the background is black with a series of concentric, light-colored circles that create a ripple effect, suggesting a gravitational well or a similar physical concept. The title 'Unstable Lagrange Points' is written in a bold, orange, sans-serif font in the upper right quadrant.

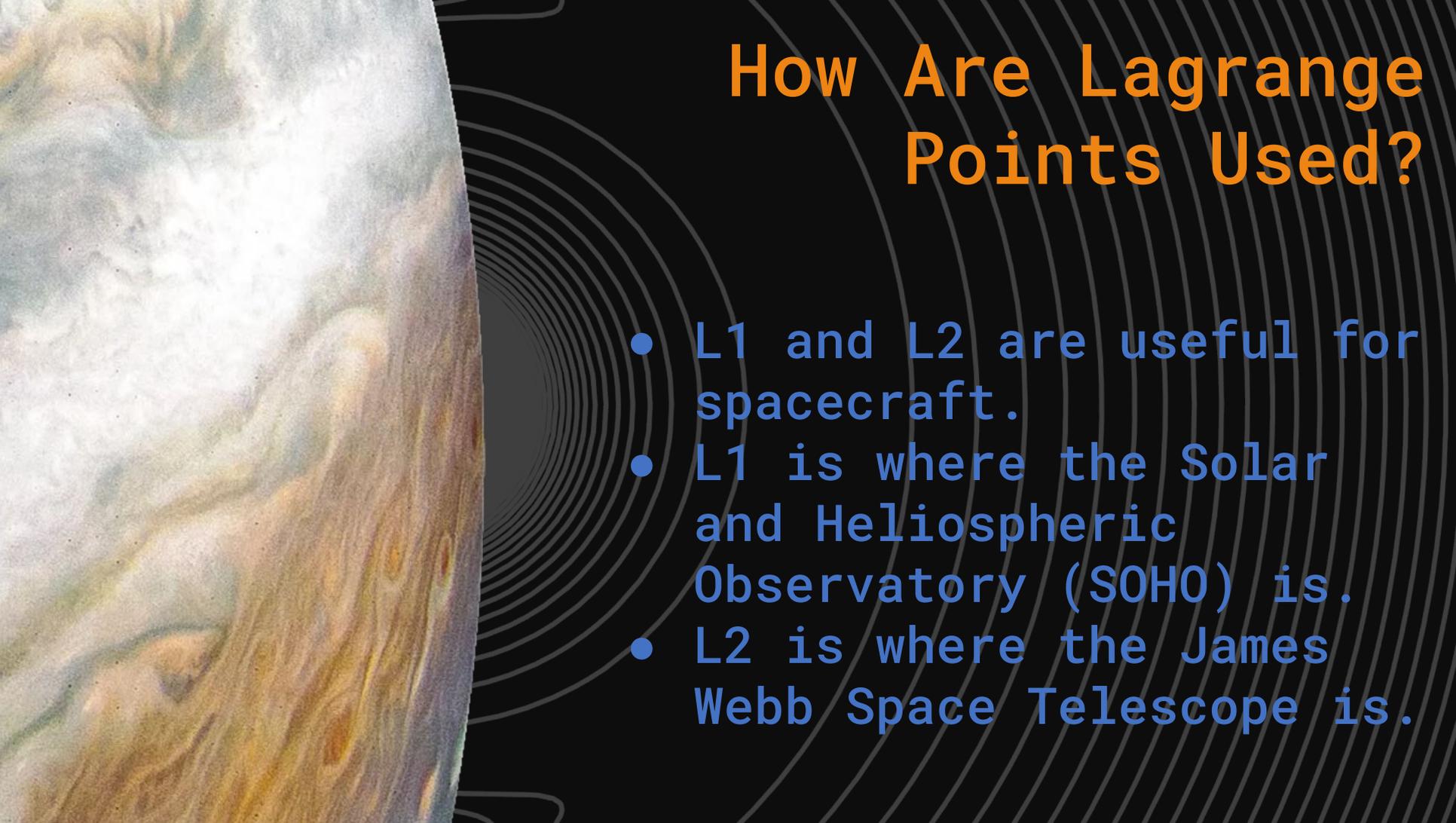
Unstable Lagrange Points

- L1, L2, and L3 are unstable.
- Objects around an unstable Lagrange Point will eventually be ejected from the region.

The image is a composite. On the left side, there is a vertical strip showing a close-up of a planet's surface, likely Jupiter, with its characteristic orange, white, and brown cloud bands. On the right side, the background is black with a series of concentric, light-colored circles that create a ripple effect, suggesting a gravitational well or orbital paths. The title 'Stable Lagrange Points' is written in a bold, orange, sans-serif font in the upper right quadrant.

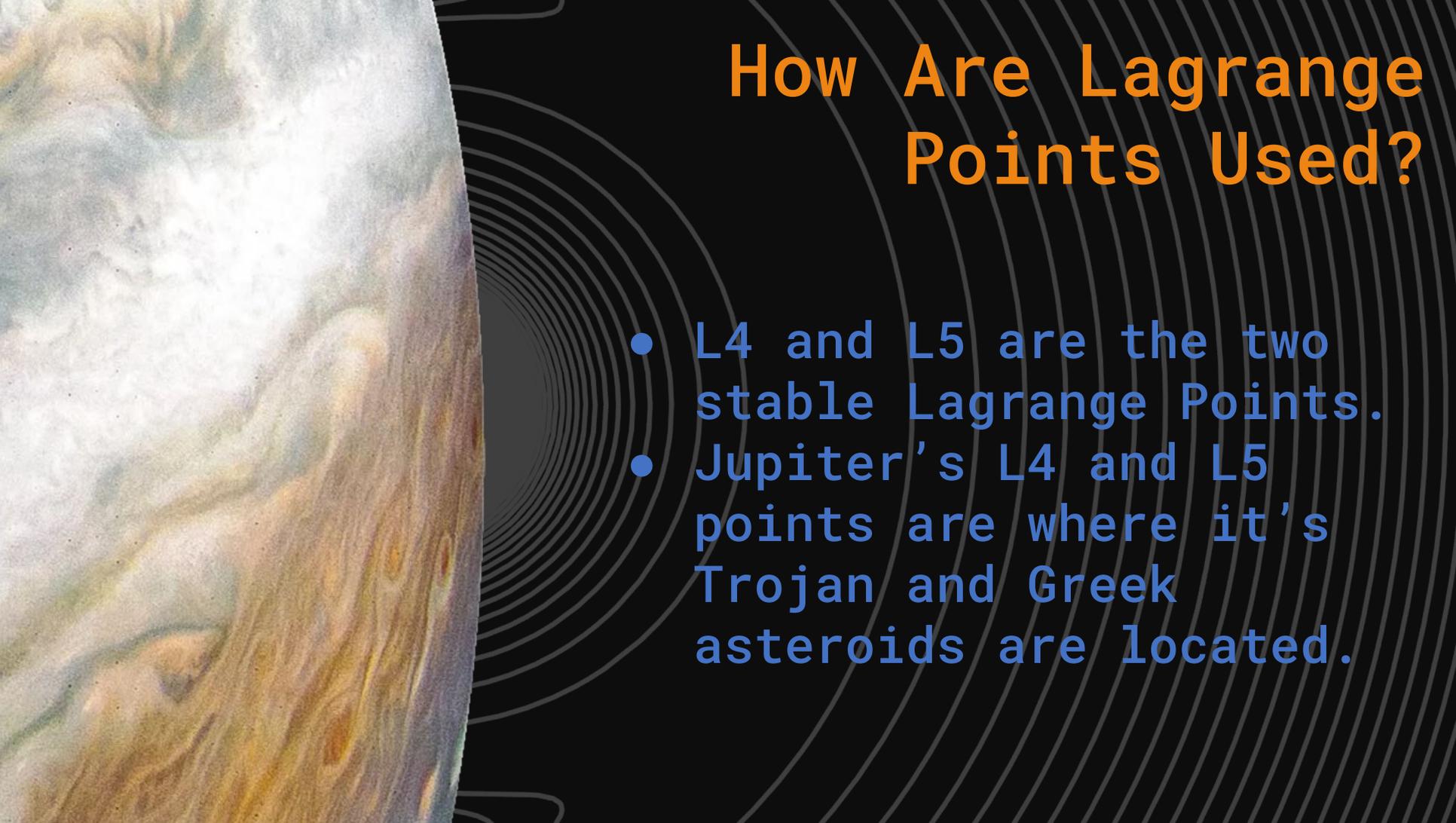
Stable Lagrange Points

- L4 and L5 are stable.
- Objects around a stable Lagrange Point will slowly librate around the point in long loops.

The image is a composite. On the left side, there is a vertical strip showing a close-up of a planet's surface, likely Jupiter, with its characteristic orange, white, and brown swirling cloud patterns. On the right side, the background is black with a series of concentric white circles that create a tunnel-like or ripple effect, receding towards the center.

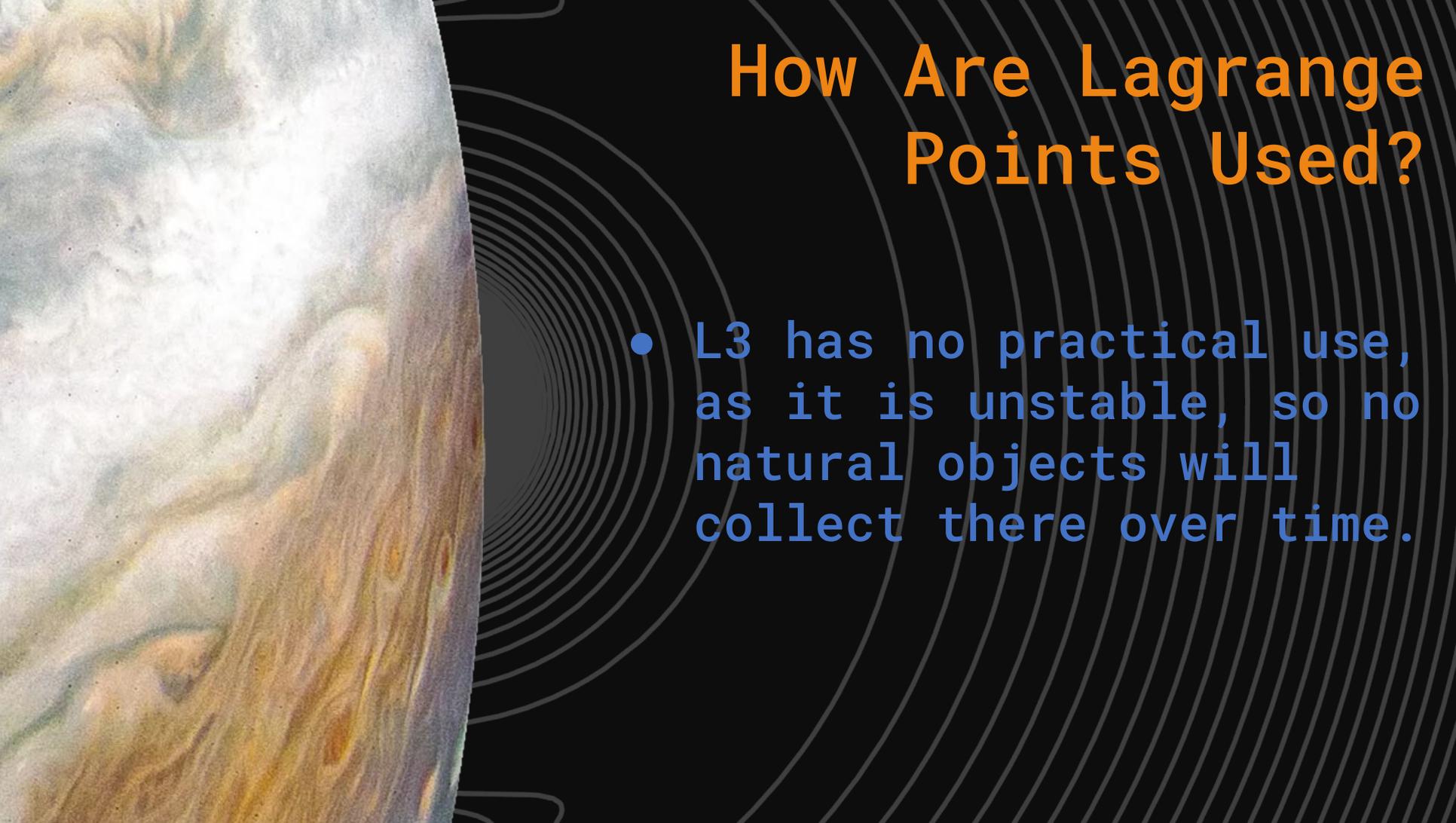
How Are Lagrange Points Used?

- L1 and L2 are useful for spacecraft.
- L1 is where the Solar and Heliospheric Observatory (SOHO) is.
- L2 is where the James Webb Space Telescope is.



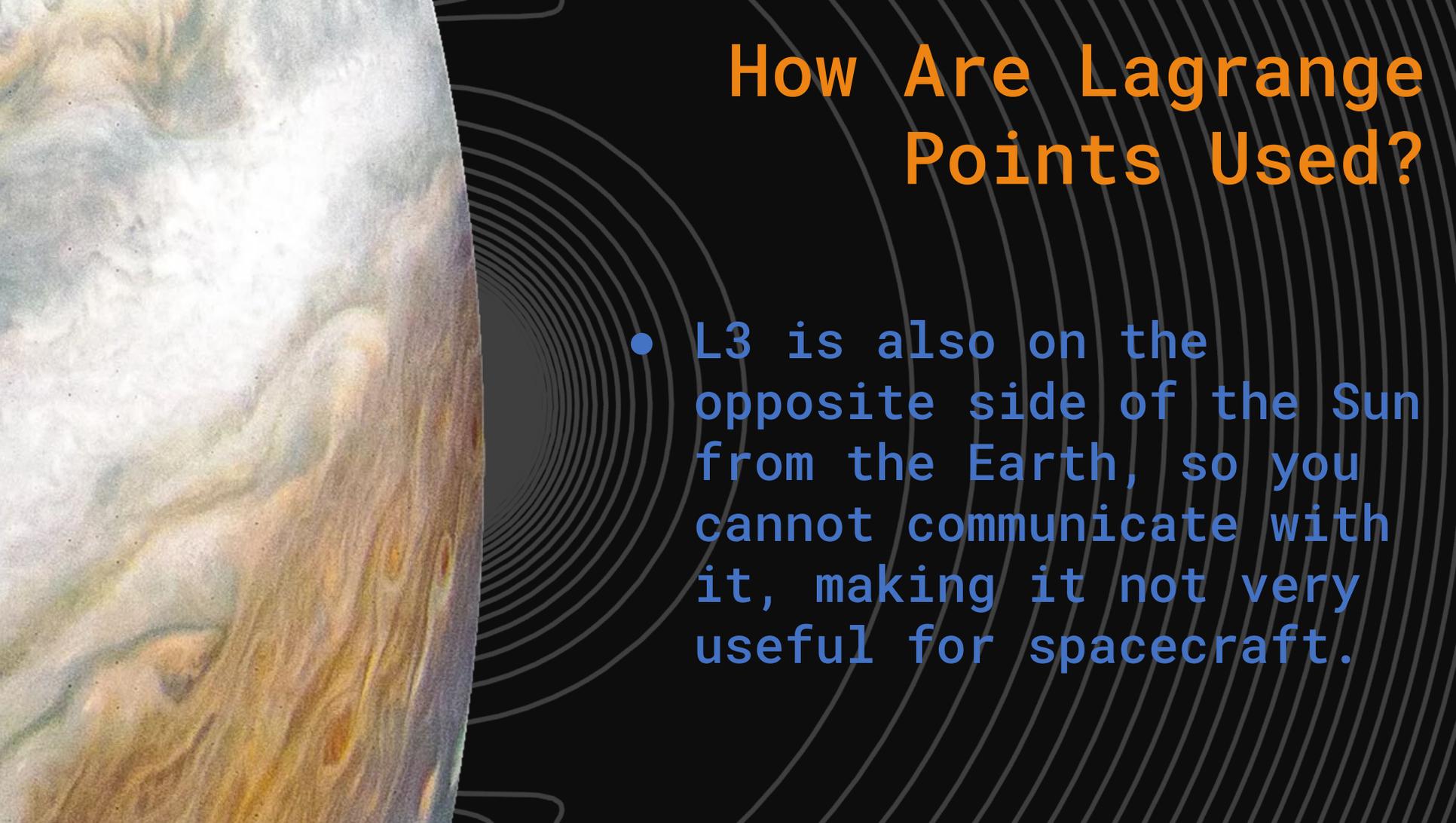
How Are Lagrange Points Used?

- L4 and L5 are the two stable Lagrange Points.
- Jupiter's L4 and L5 points are where its Trojan and Greek asteroids are located.



How Are Lagrange Points Used?

- L3 has no practical use, as it is unstable, so no natural objects will collect there over time.



How Are Lagrange Points Used?

- L3 is also on the opposite side of the Sun from the Earth, so you cannot communicate with it, making it not very useful for spacecraft.