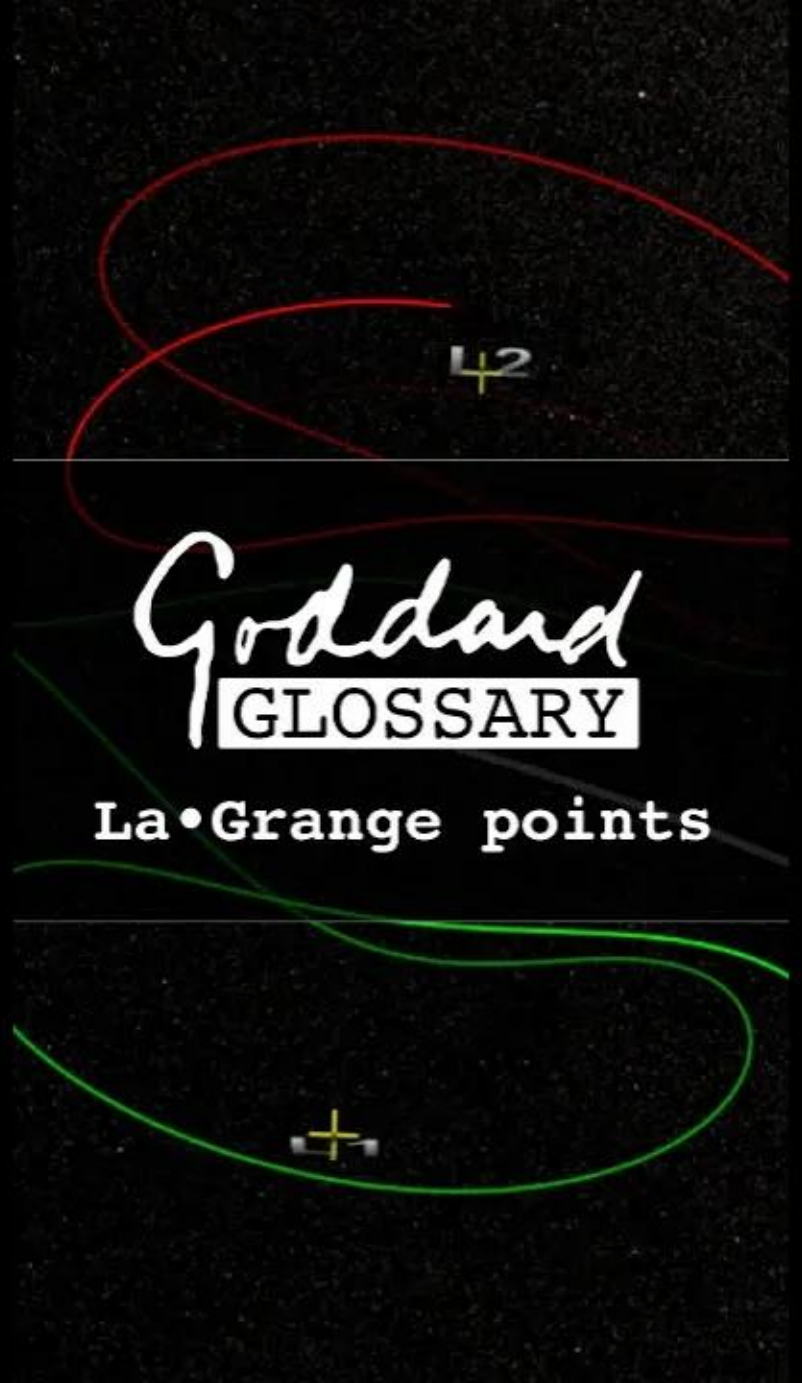
L2
Goddard
GLOSSARY
La•Grange points
L1

1
00:00:00,300 --> 00:00:02,933
Lagrange points. Named after Italian
mathematician

2
00:00:02,933 --> 00:00:04,600
Joseph-Louis Lagrange.

3
00:00:04,600 --> 00:00:07,600
Lagrange points are a solution
to what's called the "three-body" problem.

4
00:00:07,833 --> 00:00:11,966
Two massive objects like the Earth
and the Sun create points in space

5
00:00:11,966 --> 00:00:15,533
where their gravitational forces balance
with the centripetal force

6
00:00:15,533 --> 00:00:18,600
of the motion of a smaller third object -
like a spacecraft.

7
00:00:19,300 --> 00:00:24,200
There are five different points where
these forces balance named L1 through L5,

8
00:00:24,700 --> 00:00:28,333
L4 and L5 are known as stable points,
and they attract objects,

9
00:00:28,333 --> 00:00:31,800
like space debris, which can easily
stay in orbit around these points.

10
00:00:32,366 --> 00:00:35,400
L1, L2,
and L3 are known as semi-stable.

11

00:00:35,666 --> 00:00:38,266
To stay put here, an object,
like a spacecraft,

12
00:00:38,266 --> 00:00:40,300
would have to use some fuel
so it doesn't drift off.

13
00:00:41,166 --> 00:00:44,000
We use L1 and L2 between the Earth and the Sun

14
00:00:44,200 --> 00:00:47,700
to host satellites and telescopes without
needing an excessive amount of fuel.

15
00:00:48,066 --> 00:00:50,300
For example,
the James Webb Telescope orbits

16
00:00:50,300 --> 00:00:53,100
in L2 on the opposite side of the Earth
from the Sun.