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## Orbital Stability Criteria for Exomoons in Stellar Binary Systems

The field of exoplanetary research has undergone a great deal of development and growth. Achievements in theoretical studies and detection techniques have allowed the discovery of over 1800 exoplanets to date. Despite this great success, the detection of the first exomoon is yet to be achieved. It is known that most stars belong to binary systems, and given that exoplanets have been discovered in some of these systems, it has been suggested that they could host exomoons as well. Understanding the constraints under which exomoons can maintain stable orbits around Jupiter-like exoplanets in different stellar binary systems is key to make their discovery possible, and maintain the ever-growing field advancing. Motivated by this, we aim to establish general stability criteria for Earth-sized exomoons, which could potentially be habitable, orbiting around a Jupiter-like planet confined to S-type orbits within different binary systems. Using the obtained stability criteria, we identify the most prominent binary systems in which exomoons may exist.