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Autore	Masuda Kento
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Nota di contenuto	Diversity of the Extrasolar Worlds -- Measurements of Stellar Obliquities -- Origin of the Misaligned Hot Jupiters: Nature or Nurture? -- Three-dimensional Stellar Obliquities of HAT-P-7 and Kepler-25 from Joint Analysis of Asteroseismology, Transit Light Curve, and the Rossiter–McLaughlin Eect -- Spin–Orbit Misalignments of Kepler-13Ab and HAT-P-7b from Gravity-Darkened Transit Light Curves -- Probing the Architecture of Hierarchical Multi-Body Systems: Photometric Characterization of the Triply-Eclipsing Triple-Star System KIC 6543674 -- Summary and Future Prospects.
Sommario/riassunto	This thesis develops and establishes several methods to determine the detailed geometric architecture of transiting exoplanetary systems (planets orbiting around, and periodically passing in front of, stars other than the sun) using high-precision photometric data collected by

the Kepler space telescope. It highlights the measurement of stellar obliquity – the tilt of the stellar equator with respect to the planetary orbital plane(s) – and presents methods for more precise obliquity measurements in individual systems of particular interest, as well as for measurements in systems that have been out of reach of previous methods. Such information is useful for investigating the dynamical evolution of the planetary orbit, which is the key to understanding the diverse architecture of exoplanetary systems. The thesis also demonstrates a wide range of unique applications of high-precision photometric data, which expand the capability of future space-based photometry.