
Rambling pulsation of classical Cepheids - lessons from space photometry

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Abstract

Space photometric data of the only Cepheid in the Kepler field, V1154 Cygni, and MOST photometry of SZ Tauri indicates that classical Cepheids are not as regular pulsators as used to believe and stated in textbooks. Cycle-to-cycle period changes and variations in the shape of the light curve are revealed from the continuous photometry covering 6 cycles of SZ Tau pulsation and several hundred pulsation cycles of V1154 Cyg. To make the situation more interesting/complicated, the MOST light curve of RT Aurigae (a Cepheid performing radial pulsation in the fundamental mode) shows stellar oscillations in a highly repetitive manner. This unexpected behaviour needs a theoretical explanation.

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