

Results from the Thousand Asteroid Light Curve Survey¹

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We present the results of our Thousand Asteroid Light Curve Survey (TALCS), a program designed to survey 12 square degrees of the ecliptic over a two week period, measuring light curves of all asteroids in the field down to $g' = 23$. Our untargeted survey pattern covered 925 Main Belt asteroids up to 140 times allowing us to determine periods for many of the objects. Our survey is sensitive through the Main Belt down to an absolute magnitude of $H = 18.5$, corresponding to a diameter $D < 1$ km. The timing of our observations was designed to provide adequate coverage of asteroids with periods ranging from very short (~ 1 hr) to moderately long (> 40 hrs).

We will present:

- the bias-corrected distribution of asteroid rotation rates;
- the determination of the average shape of main belt asteroids based on that distribution;
- correlations between the rotation rates of asteroids and their orbital and physical parameters; and
- a collection of light curves representing the first main belt 'super-fast' rotators - objects that appear to be rotating at speeds above the gravitationally-bound breakup limit.

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