

## Asteroid photometry at the Palmer Divide Observatory

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The Palmer Divide Observatory is owned and operated by Brian D. Warner and is located about 20 miles north of Colorado Springs, CO. Using three 0.35m SCT and one 0.5m Ritchey-Chretien telescopes with CCD cameras, its work is almost exclusively dedicated to asteroid lightcurves and photometry. Since 1999, it has generated data for almost 400 distinct asteroids and published almost 350 light-curves. Of these, approximately 10-15 have been binary asteroids with PDO being the primary discoverer on six. Furthermore, five of these were located in the Hungaria family and/or group.

Since the Hungarias are not planet-crossers, the discovery of binaries within that group helped establish that binary formation must come about by means other than tidal encounters alone and that the YORP effect may be the leading contender as an alternate mechanism (Warner and Harris, 2006). The concentration of work on the Hungarias has also shown an excess of fast and slow rotators, somewhat similar to what's seen among the NEA population.

The presentation will highlight past work, including that done in association with the Binary Asteroid Survey Group headed by Petr Pravec of Ondrejov Observatory, Czech Republic (Pravec 2007), and future plans for follow up for spin axis modeling and H-G determinations.

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### References

Pravec, P. (2007) "Photometric Survey for Asynchronous Binary Asteroids."  
<http://www.asu.cas.cz/~asteroid/binastphotsurvey.htm>

Warner, B.D., Harris, A.W. (2006). "A Comparative Study of Hungaria versus NEA Binary Population and Spin Axis Characteristics." *BAAS* **38**, 596 (59.17).