

PHOTOMETRY FROM GMARS AND SANTANA OBSERVATORIES – APRIL TO JUNE 2007

Robert D. Stephens
Goat Mountain Astronomical Research Station (GMARS)
11355 Mount Johnson Court, Rancho Cucamonga, CA 91737
RStephens@foxandstephens.com

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Lightcurve period and amplitude results from Santana and GMARS Observatories are reported for 2007 April-June. 348 May: 7.3812 ± 0.0008 hr, 0.16 mag. 502 Signe: 10.922 ± 0.002 hr, 0.44 mag. 542 Susanna: 10.069 ± 0.003 hr, 0.11 mag. 1096 Reunerta: 13.036 ± 0.002 hr, 0.26 mag. 3028 Zhangguoti: 4.826 ± 0.001 hr, 0.20 mag. (7055) 1989 KB: 4.16845 ± 0.00005 hr, 0.20 mag. 2006 VV2: 2.413 ± 0.002 hr, 0.32 mag.

The author operates telescopes at two observatories. Santana Observatory is located in Rancho Cucamonga, California and GMARS (Goat Mountain Astronomical Research Station) located at the Riverside Astronomical Society's observing site. Details of the equipment are in Stephens (2007).

Asteroids 348 May, 502 Signe, and 3028 Zhangguoti were selected from the list of asteroid photometry opportunities published by Brian Warner and Alan Harris on the Collaborative Asteroid Lightcurve Link website (CALL 2007). 1096 Reunerta was selected to follow up on the author's observations described in Stephens (2001). (7055) 1989 KB was selected from the Binary Asteroid Survey list Parvec (2007). 2006 VV2 was a target of opportunity. The author measured the images using MPO Canopus, which employs differential aperture photometry to produce the raw data. Period analysis was done using Canopus, which incorporates the Fourier analysis algorithm (FALC) developed by Harris (1989).

The results are summarized in the table below. Column 2 gives the dates over which the observations were made, Column 3 gives the number of actual runs made during that time span and column 4 gives the number of observations used. Column 5 is the range of phase angles over the full data range. If there are three values in the column, this means the phase angle reached a minimum with the middle valued being the minimum. Columns 6 and 7 give the range of values for the Phase Angle Bisector (PAB) longitude and latitude respectively. Column 8 gives the period and column 9 gives the error in hours. Columns 10 and 11 give the amplitude and error in magnitudes.

348 May. The period of 7.3812 hours agrees with the 7.38528 hour period of Demeautis (Behrend 2007).

502 Signe. The period of 10.922 hours appears to update the 10.5 hour period estimate by Tedesco (1979).

542 Susanna. The 10.069 hour period agrees with a 10.084 hour period obtained by Don Pray between May 23 and June 7, 2007 (private communications) and a 10.0747 hour period reported by Sheridan (CALL 2007).

1096 Reunerta. The period of 13.036 hours agrees with previously reported periods of 13.02 hours by the author (Stephens 2001) and 13.03 hours by Crippa and Manzini (Behrend 2007).

3028 Zhangguoti. The period of 4.826 hours does not support the previously reported period of 4.401 hours by Gross (CALL 2007).

(7055) 1989 KB. The data presented is the author's only. It was combined with other observers of the Binary Asteroid Survey to generate the reported period of 4.16845 hours.

2006 VV2. This asteroid was imaged during its close flyby on March 31, 2007. Due to its rapid motion, twelve sessions were created using different comparison stars. These sessions were normalized to each other. However, Session 119 had an unknown 0.06 magnitude shift which could not be reconciled.

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Asteroid	Dates (2007)	Sess	Phase	L _{PAB}	B _{PAB}	Per (h)	PE	Amp	AE
348 May	05/15-06/07	4	13.0,17.5	199.3,201.2	10.5,9.6	7.3812	0.0008	0.16	0.04
502 Signe	06/10-15	7	13.2,12.0	275.2,275.1	22.6,22.2	10.922	0.002	0.44	0.04
542 Susanna	06/19-26	6	9.8,11.6	246.0,246.1	14.6,14.4	10.069	0.003	0.11	0.04
1096 Reunerta	04/26-05/11	8	6.6,11.6	203.7	9.9,9.3	13.036	0.002	0.26	0.05
3028 Zhangguoti	04/17-04/25	4	5.0,8.0	194.3	1.4,1.7	4.826	0.001	0.20	0.04
(7055) 1989 KB	05/12-13	2	9.9,9.5	242.3	12.4,12.2	4.16845	0.00005	0.20	0.02
2006 VV2	03/31	1	43.9,42.9	169.2,169.5	9.9,9.1	2.413	0.002	0.32	0.03

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