

ASTEROID LIGHTCURVE ANALYSIS AT THE OAKLEY SOUTHERN SKY OBSERVATORY: 2011 NOVEMBER-DECEMBER

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Photometric data for 26 asteroids were collected over 20 nights of observing during 2011 November through December at the Oakley Southern Sky Observatory. The asteroids were: 664 Judith, 739 Mandeville, 781 Kartvelia, 871 Amneris, 971 Alsatia, 1577 Reiss, 2068 Dangreen, 2745 San Martin, 2870 Haupt, 2909 Hoshi-no-ie, 3041 Webb, 4359 Berlage, 4363 Sergej, 4804 Pasteur, 5870 Baltimore, (5874) 1989 XB, 6121 Plachinda, 6172 Prokofeana, 6402 Holstein, (10765) 1990 UZ, 12738 Satoshimiki, 16358 Plesetsk, (23276) 2000 YT101, (24475) 2000 VN2, (96487) 1998 JU1, (98129) 2000 SD25.

Twenty six asteroids were observed from the Oakley Southern Sky Observatory in New South Wales, Australia, on the nights of 2011 November 1-5, 7, 14, 15, 18, 19, 26-28 and December 1-3, 13, 14, 16, and 20. From the data, we were able to find lightcurves for only 12 asteroids. During this period, we experienced marginal weather with frequent high, thin clouds. The weather caused our data to be noisy and unreliable. Of the twelve lightcurves found, eight were for asteroids with no previously published periods. Our results for three of the four remaining asteroids agreed with the previously published periods.

The selection of asteroids was based primarily on their sky position about one hour after sunset. The next criterion for selecting asteroids was that those without previously published periods were given higher priority than asteroids with known periods. Finally, asteroids with uncertain periods were also selected with the hopes that improvements of previous results could be made. We used an $f/8.1$ 0.5-meter Ritchey-Chretien optical tube assembly on a Paramount ME mount mounted with a Santa Barbara Instrument Group (SBIG) STL-1001E CCD camera and clear filter. The image scale was 1.2 arcseconds per pixel. Exposure times varied between 20 and 210 seconds. Calibration of the images was done using master twilight flats, darks, and bias frames. All calibration frames were created using *CCDSOFT*. *MPO Canopus* was used to measure the processed images.

As far as we are aware, these are the first reported periods for 4359 Berlage, 4363 Sergej, 4804 Pasteur, 6121 Plachinda, 6172 Prokofeana, (10765) 1990 UZ, 16358 Plesetsk, and (23276) 2000 YT101.

664 Judith. Our data are inconsistent with the period of 10.6829 ± 0.0005 h found by Hosek (2011).

781 Kartvelia. Our results are close to the period of 19.06 ± 0.01 h found by Behrend (2012) but not within experimental uncertainty.

971 Alsatia. Our results agree within experimental uncertainty with the period of 9.60 ± 0.07 h found by Behrend (2012).

1577 Reiss. Our results agree within experimental uncertainty with the period of 4.5051 ± 0.0002 h found by Pravec (2012).

Number	Name	Dates	mm/dd 2011	Data Points	Period (h)	Period Error (h)	Amp (mag)	Amp Error (mag)
664	Judith	11/1 - 11/4		74	19.35	0.06	0.35	0.02
739	Mandeville	12/13, 12/14, 12/16, 12/20		72			0.14	0.03
781	Kartvelia	12/13, 12/14, 12/16, 12/20		69	19.02	0.02	0.27	0.03
871	Amneris	11/26 - 11/28, 12/1 - 12/3		98			0.06	0.08
971	Alsatia	11/1 - 11/5, 11/7		100	9.61	0.02	0.21	0.01
1577	Reiss	11/1 - 11/5, 11/7		92	4.505	0.002	0.20	0.05
2068	Dangreen	11/14, 11/15, 11/18, 11/19		66			0.04	0.01
2745	San Martin	12/13, 12/14, 12/16, 12/20		78			0.04	0.04
2870	Haupt	11/1 - 11/5, 11/7		69			0.14	0.02
2909	Hoshi-no-ie	11/26 - 11/28, 12/1 - 12/3		104			0.23	0.03
3041	Webb	11/14, 11/15, 11/18, 11/19		61			0.05	0.04
4359	Berlage	11/26 - 11/28, 12/1 - 12/3		96	7.413	0.002	0.90	0.05
4363	Sergej	11/14, 11/18, 11/19		53	13.04	0.01	0.50	0.04
4804	Pasteur	11/1 - 11/4		75	13.69	0.02	0.28	0.02
5870	Baltimore	12/13, 12/14, 12/16, 12/20		78			0.3	0.1
5874	1989 XB	11/14, 11/18, 11/19		42			0.06	0.01
6121	Plachinda	11/26 - 11/28, 12/1 - 12/3		100	4.0863	0.0006	0.35	0.02
6172	Prokofeana	11/26 - 11/28, 12/1 - 12/3		98	6.540	0.001	0.35	0.02
6402	Holstein	11/1 - 11/4, 11/7		81			0.10	0.05
10765	1990 UZ	11/14, 11/15, 11/18, 11/19		59	4.378	0.003	0.17	0.01
12738	Satoshimiki	12/13, 12/14, 12/16, 12/20		64			0.20	0.08
16358	Plesetsk	11/1 - 11/5, 11/7		101	6.560	0.002	0.47	0.06
23276	2000 YT101	11/1 - 11/5, 11/7		89	3.661	0.004	0.22	0.06
24475	2000 VN2	11/14, 11/15, 11/18, 11/19		76			0.04	0.01
96487	1998 JU1	12/13, 12/14, 12/16, 12/20		73			0.06	0.04
98129	2000 SD25	11/26 - 11/28, 12/1 - 12/3		119			0.11	0.03

References

Behrend, R. (2012).

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