

NEAR-IR MINOR PLANET PHOTOMETRY FROM BURLEITH OBSERVATORY

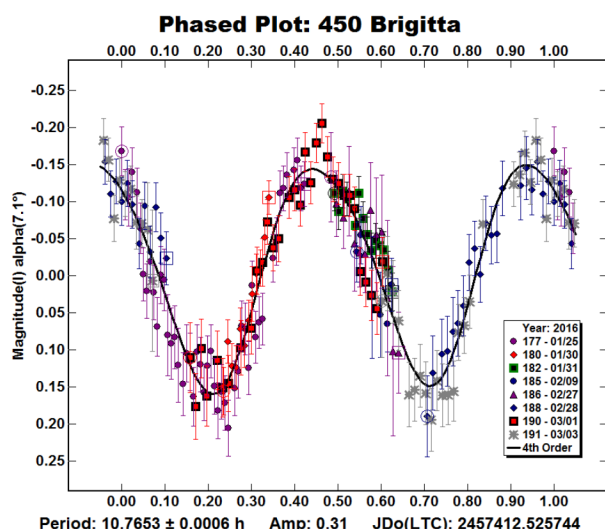
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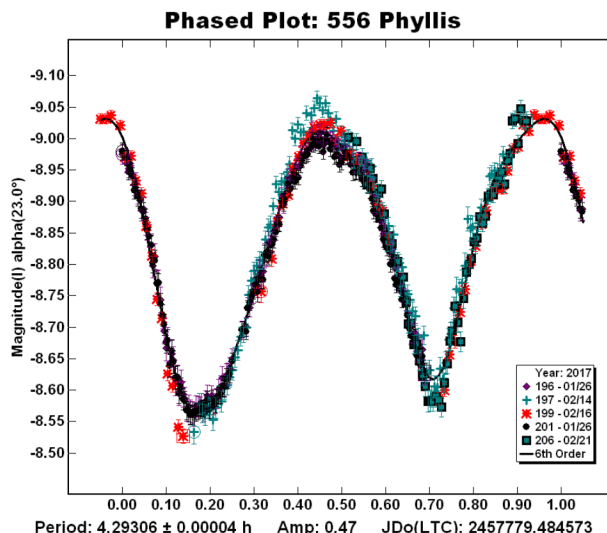
Near-IR observations from a bright-sky urban area provide rotation periods for six main-belt minor planets: 450 Brigitta, 556 Phyllis, 849 Ara, 984 Gretia, 1152 Pawona and 1310 Villigera.

The bright-sky near-infrared (NIR; Cousins Ic, 700-900 nm) photometry program of urban Burleith Observatory has been previously described in Schmidt (2016). Revised rotation periods are presented for six main-belt minor planets. All images were bias and sky flat-field corrected using CCDSoft version 5.00.217. Photometry and period analysis was performed using *MPO Canopus* version 10.7.7.0 (Warner, 2016); MPO CSS was used to select comparison stars with solar-like spectra. Lightcurve history was found using the MinorPlanet.info Asteroid Lightcurve Database (LCDB) 2016 December Release <http://www.MinorPlanet.info/lightcurvedatabase.html>.

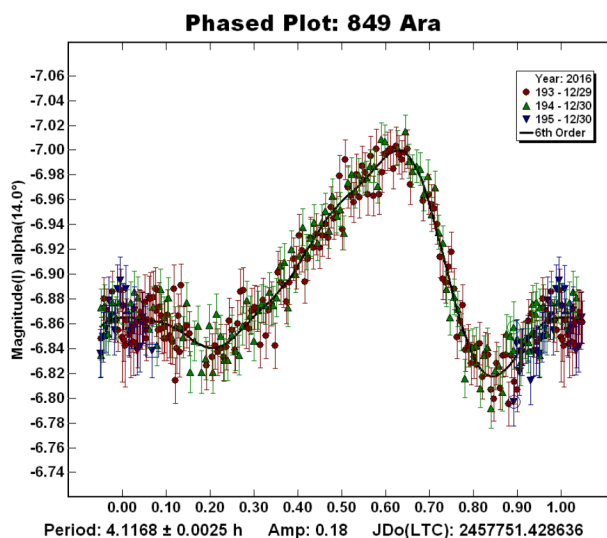
450 Brigitta. This Eos family member was discovered 1899 by M. Wolf and A. Schwassmann at Heidelberg (Schmadel (1999). The observed period agrees with that of Hanuš, Delbo, et. al (2016d).



556 Phyllis. This S-type minor planet was discovered in 1905 by P. Götz, Heidelberg. Marciniak *et al.* (2007) found a period of 4.292623 ± 0.000001 h.



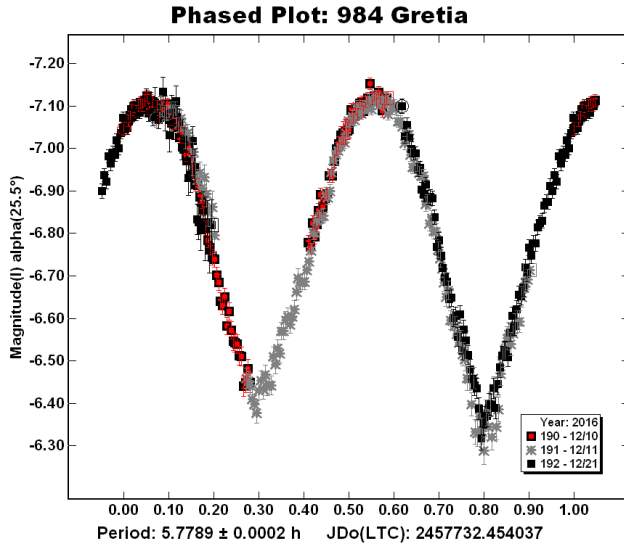
849 Ara. Discovered 1912 by S. Belyavskij, Semeis and named in honor of the American Relief Administration, which fed over 10 million Russians during the famine of 1921-23. Durech *et al.* (2011) found a period of 4.116391 ± 0.000005 h.



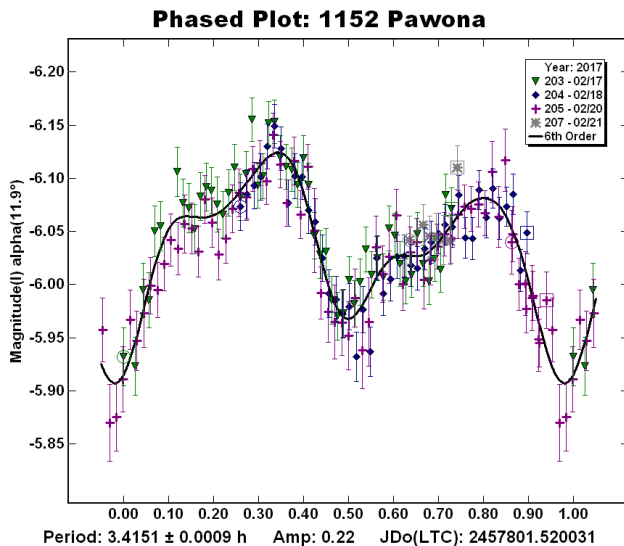
984 Gretia. Discovered 1922 by K. Reinmuth, Heidelberg, this and 1026 Ingrid were named for the sister-in-law and niece of Albrecht Kahrstedt (1897-1922), renowned computer of minor

Number	Name	Obs.Date Range	Images	Exp. (s)	Phase (°)	Period (h)	P.E. (h)	Amp Ic (mag)	A E Ic (mag)
		2016*-2017 (mm/dd)							
450	Brigitta	01/25*-03/03*	91	360	7.1	10.7653	0.0006	0.31	0.06
556	Phyllis	01/26 - 02/21	540	90	23.0	4.29306	0.00004	0.47	0.05
849	Ara	12/29*-12/30*	372	120	14.0	4.1168	0.0025	0.18	0.04
984	Gretia	12/10*-12/21*	400	90	25.5	5.7789	0.0002	0.75	0.03
1152	Pawona	02/17 - 02/21	96	180	11.9	3.4151	0.0009	0.22	0.08
1310	Villigera	03/06 - 03/17	398	105	24.3	7.8315	0.0006	0.46	0.03

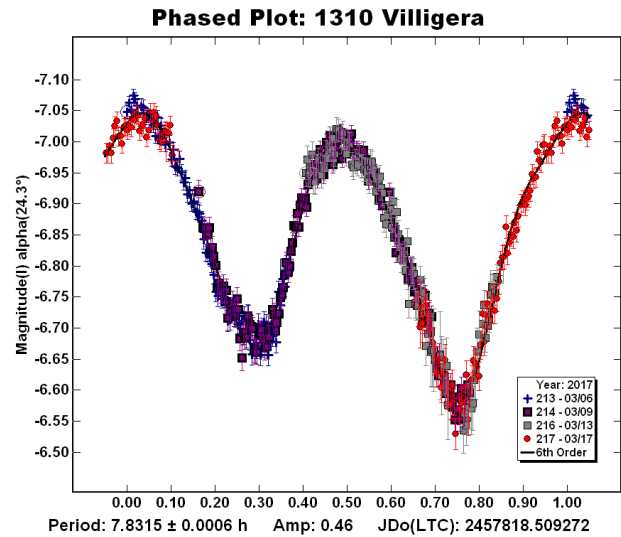
planet orbits at the Astronomisches Rechen-Institute, to celebrate niece Ingrid's baptismal day, 1926. Marciniak *et al.* (2008) found a period of 5.778026 ± 0.000001 h.



1152 Pawona. Discovered 1930 by K. Reinmuth, Heidelberg. Its name combines those of astronomers J. Palisa and M. Wolf when it was found to coincide with 1925 SF, the final minor planet discovery of Palisa. Behrend (2011) found a period of 3.41500 ± 0.00005 h.



1310 Villigera. Discovered 1932 by A. Schwassmann, Bergedorf, and named for W. Villiger (1872-1938), head of astronomical instruments at Carl Zeiss, Jena. The lightcurve of this Mars-approacher was first reported by R. A. Koff (Koff, 2002), and his result is here confirmed. Hanuš, Ďurech, *et al.* (2016) found a period of 7.83001 ± 0.00005 h.



Acknowledgements

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