

Acknowledgements

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COLLABORATIVE ASTEROID PHOTOMETRY
FROM UAI: 2025 APRIL-JUNE

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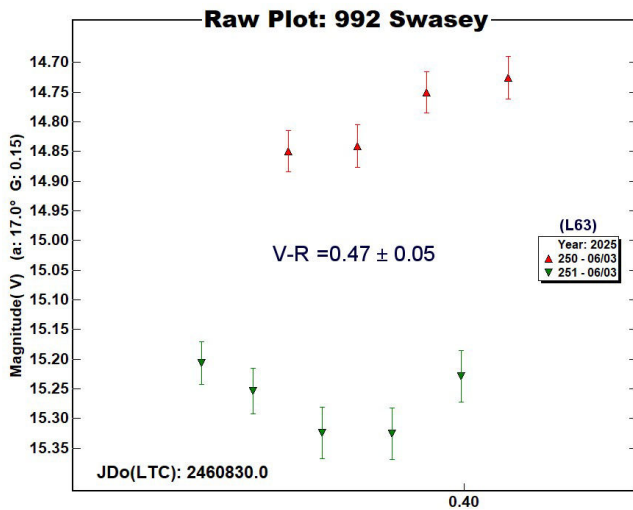
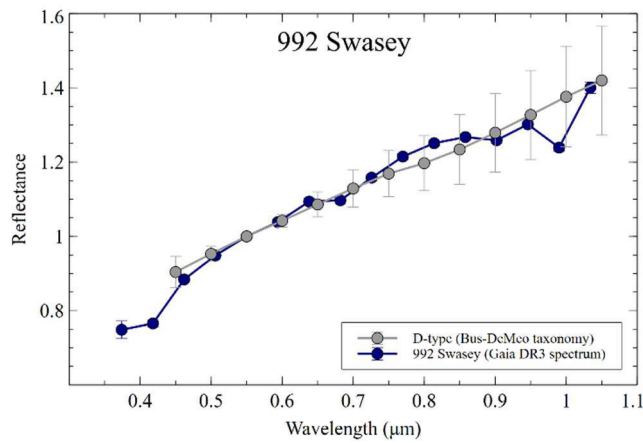
(Received: 2025 July 10)

Photometric observations of five asteroids were made in order to acquire lightcurves for shape/spin axis modeling. Lightcurves were acquired for 992 Swasey, 1155 Aenna, 1326 Losaka, (9058) 1992 JB, and (424482) 2008 DG5.

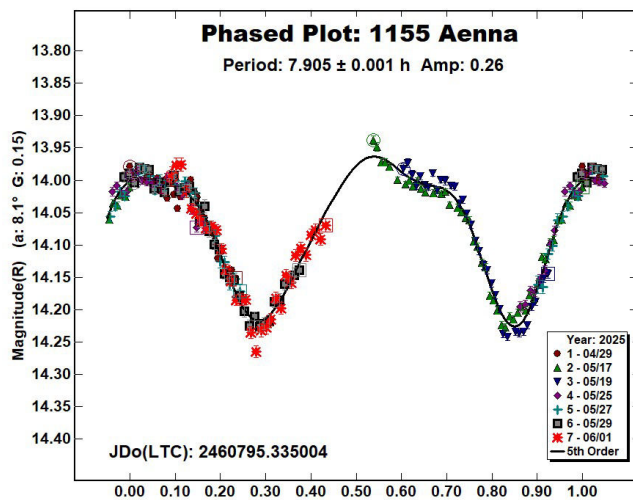
Collaborative asteroid photometry was done inside the Italian Amateur Astronomers Union (UAI, 2025) group. The targets were selected mainly in order to acquire lightcurves for shape/spin axis modeling. Table I shows the observing circumstances and results.

The CCD observations were made in 2025 April-June using the instrumentation described in Table II. Lightcurve analysis was performed at the Balzaretto Observatory with *MPO Canopus* (Warner, 2023). All the images were calibrated with dark and flat frames and converted to standard magnitudes using solar colored field stars from CMC15 and ATLAS catalogues, distributed with *MPO Canopus*. For brevity, "LCDB" is a reference to the asteroid lightcurve database (Warner et al., 2009).

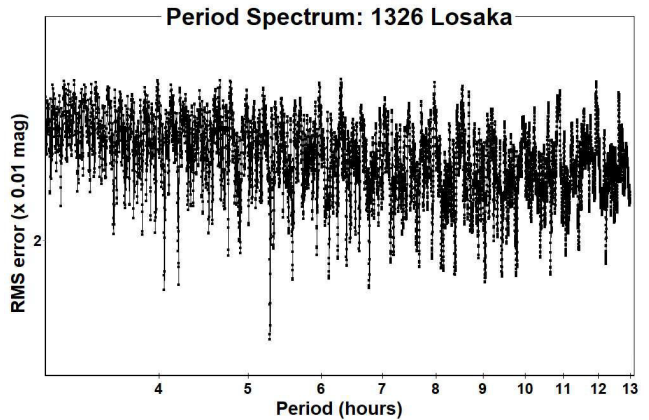
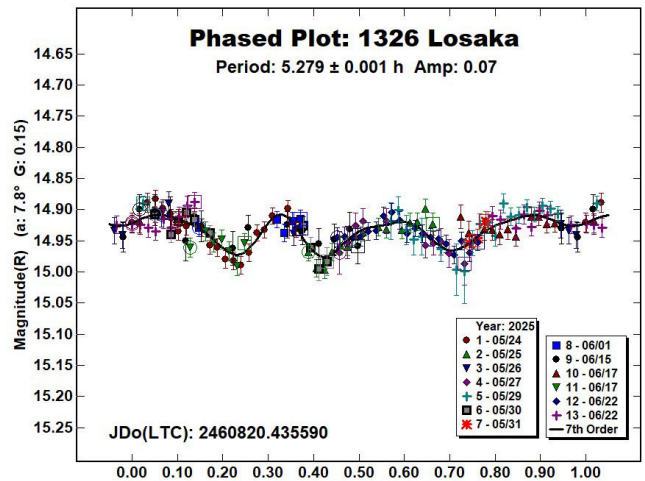
992 Swasey is a low albedo outer main-belt asteroid. The reflectance spectrum for 992 Swasey, extracted from Gaia ESA Archive (2025), is close to a D-type when compared with the Bus-DeMeo taxonomy (DeMeo et al., 2009). Multiband photometry was acquired by M. Iozzi (L63) on 2025 June 15, from which we found a color index $V-R = 0.47 \pm 0.05$, consistent with a D-type asteroid (Pravec et al., 2012; 0.455 ± 0.033).



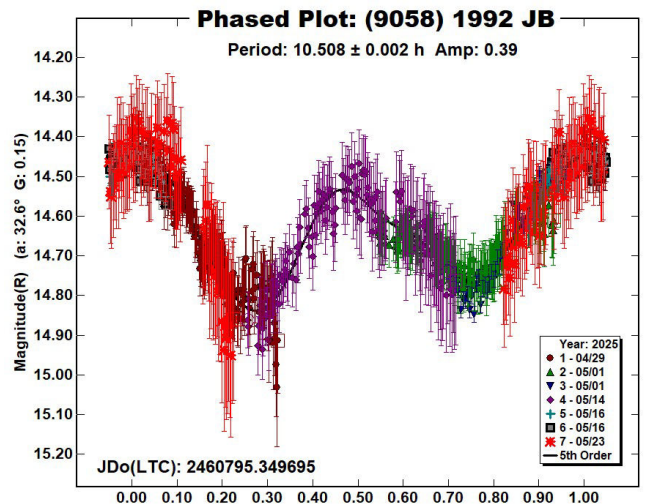
1155 Aenna is a Xe-type (Bus and Binzel, 2002) inner main-belt asteroid. Observations by N. Ruocco (C82) were made over seven nights. The period analysis shows a synodic period of $P = 7.905 \pm 0.001$ h with an amplitude $A = 0.26 \pm 0.03$ mag. The period is close to the previously published results in the LCDB.



1326 Losaka is a CSU-type (Tholen, 1984) middle main-belt asteroid. Observations by A. Marchini and R. Papini (K54) were made over seven nights. The period analysis shows a quadrimodal solution with a synodic period of $P = 5.279 \pm 0.001$ h and an amplitude $A = 0.07 \pm 0.03$ mag. This period differs from the solution found by Warner (2006; 6.900 ± 0.001).



(9058) 1992 JB is an Apollo Near-Earth asteroid. Collaborative observations were made over six nights. We found a bimodal solution with a synodic period of $P = 10.508 \pm 0.002$ h and an amplitude $A = 0.39 \pm 0.10$ mag. No others periods were found in the LCDB.

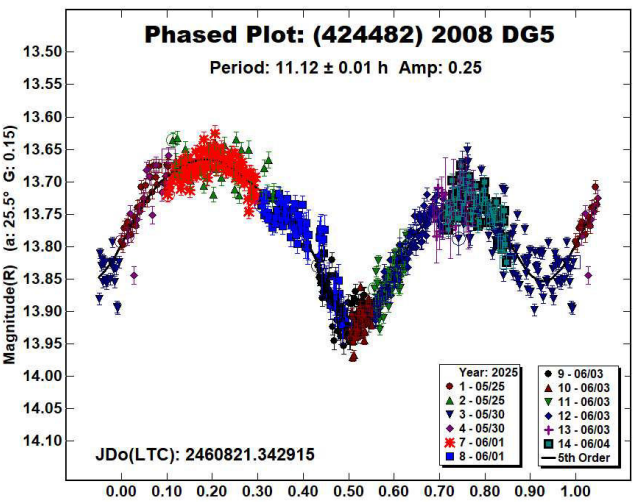
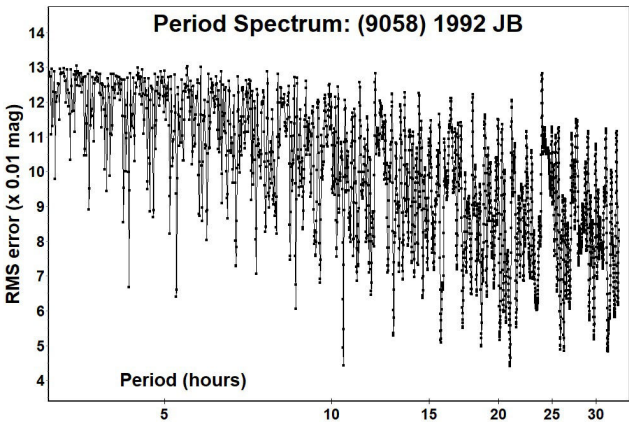


Number	Name	2025 mm/dd	Phase	L _{PAB}	B _{PAB}	Period(h)	P.E.	Amp	A.E.	Grp
992	Swasey	06/03	17.0	209	1					MB-O
1155	Aenna	04/29-06/01	8.1-22.7	208	1	7.905	0.001	0.26	0.03	MB-I
1326	Losaka	05/24-06/22	*7.7-5.7	260	8	5.279	0.001	0.07	0.03	MB-M
9058	1992 JB	04/29-05/23	*32.6-34.9	212	9	10.508	0.002	0.39	0.10	NEA
424482	2008 DG5	05/25-06/04	25.6-68.7	230	8	11.12	0.01	0.25	0.04	NEA

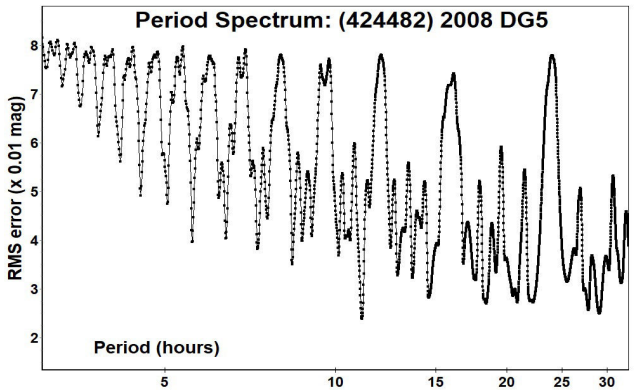
Table I. Observing circumstances and results. The first line gives the results for the primary of a binary system. The second line gives the orbital period of the satellite and the maximum attenuation. The phase angle is given for the first and last date. If preceded by an asterisk, the phase angle reached an extrema during the period. L_{PAB} and B_{PAB} are the approximate phase angle bisector longitude/latitude at mid-date range (see Harris et al., 1984). Grp is the asteroid family/group (Warner et al., 2009).

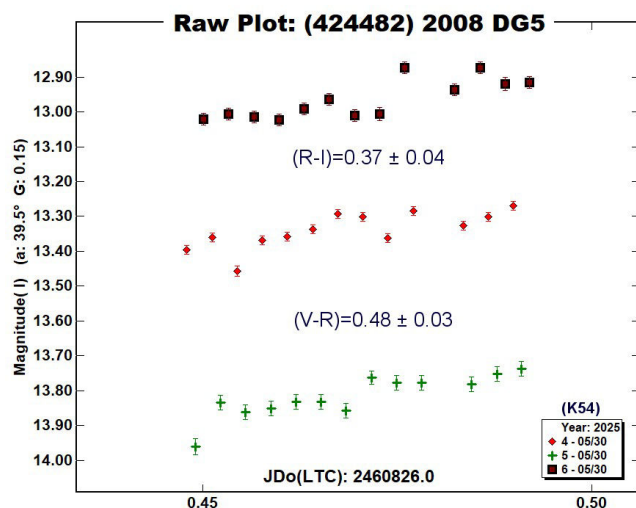
Observatory (MPC code)	Telescope	CCD	Filters	Observed Asteroids (#Sessions)
Astronomical Observatory, University of Siena (K54)	0.30-m MCT f/5.6	SBIG STL-6303e (bin 2x2)	C, V, Rc, Ic	1326 (7) 424482 (4)
Osservatorio Astronomico Nastro Verde (C82)	0.35-m SCT f/6.3	SBIG ST10XME (bin 2x2)	C	1155 (7)
Iota Scorpii (K78)	0.40-m RCT f/6.1	CMOS QHY 268 (bin 4x4)	C	9058 (5)
Schiaparelli Observatory (204)	0.84-m NRT f/3.5	Moravian C3-61000 PRO (bin 4x4)	C	9058 (2)
HOB Astronomical Observatory (L63)	0.20-m SCT f/6.0	ATIK 383L+ (bin 2x2)	C, V, Rc	992 (1) 424482 (1)
Zen Observatory (M26)	0.30-m RCT f/7.4	ATIK 383L+ (bin 2x2)	C	424482 (2)
GiaGa Observatory (203)	0.36-m SCT f/5.8	Moravian G2-3200	C	9058 (1)

Table II. Observing Instrumentations. MCT: Maksutov-Cassegrain, NRT: Newtonian Reflector, RCT: Ritchey-Chretien, SCT: Schmidt-Cassegrain.



(424482) 2008 DG5 is an Apollo Near-Earth asteroid, classified as Potentially Hazardous Asteroid (PHA). Collaborative observations were made over four nights. We found a bimodal solution with a synodic period of $P = 11.12 \pm 0.01$ h and an amplitude $A = 0.25 \pm 0.04$ mag. No others periods were found in the LCDB. Multiband photometry was acquired by A. Marchini and R. Papini (K54) on 2025 May 30, from which we found the color indices $V-R = 0.48 \pm 0.03$; $R-I = 0.37 \pm 0.04$, both close to a S-type asteroid (Shevchenko and Lupishko, 1998; 0.49 ± 0.05 ; 0.41 ± 0.06).





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V-R COLOR INDICES FOR NINE MAIN-BELT ASTEROIDS

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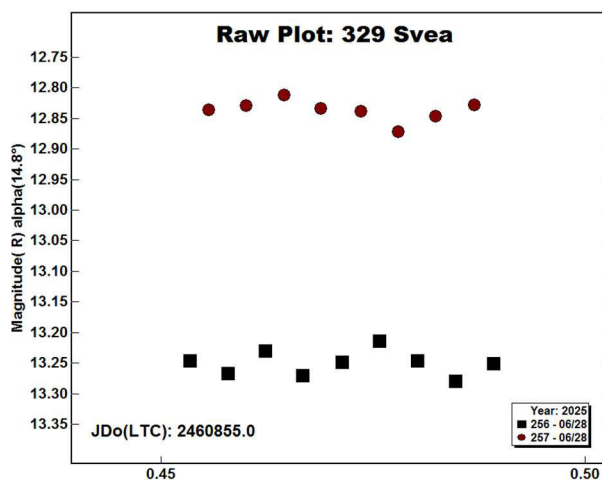
(Received: 2025 July 14)

We present V-R color indices for a sample of nine main-belt asteroids. Observations were conducted from the H.O.B. Astronomical Observatory (MPC code L63) between June 28 and July 04, 2025.

All observations were conducted at the H.O.B. Astronomical Observatory (MPC code L63). The instrumentation consists of a 0.20-m f/6 Schmidt-Cassegrain telescope. Images were acquired with an ATIK 383L+ monochrome CCD camera, featuring a Kodak KAF-8300 sensor. The image scale is 1.9 arcsec/pixel. All observations were performed with the targets at an altitude greater than 30 degrees above the horizon. For each target, a time-series of exposures was acquired by alternating between the Johnson-Cousins V and Rc filters.

All science frames were calibrated in a standard manner using dark and flat-field frames and converted to standard magnitudes using solar-colored field stars from ATLAS catalogues distributed with *MPO Canopus* (Warner, 2019). Instrumental magnitudes were extracted by aperture photometry in *MPO Canopus* (Warner, 2019). Each calibrated frame was analysed by differential photometry against five solar-coloured ATLAS comparison stars, common to both V and Rc filters. The V-R color index is reported as the mean of these measurements, with its uncertainty given by the standard error of the mean.

329 Svea is a C-type (Bus and Binzel, 2002) inner main-belt asteroid. Observations were made on 2025 June 28. We found a color index of $V-R = 0.41 \pm 0.02$. Our value lies near the upper end for C-Type asteroids ($V-R = 0.38 \pm 0.05$; Shevchenko and Lupishko, 1998).



347 Pariana is an M-type (Tholen, 1984) middle main-belt asteroid. Observations were made on 2025 July 01. We found a color index of $V-R = 0.43 \pm 0.06$. This value falls within the expected range for M-type asteroids ($V-R = 0.42 \pm 0.04$; Shevchenko and Lupishko, 1998).