

COLLABORATIVE ASTEROID PHOTOMETRY FROM UAI: 2026 APRIL-JUNE

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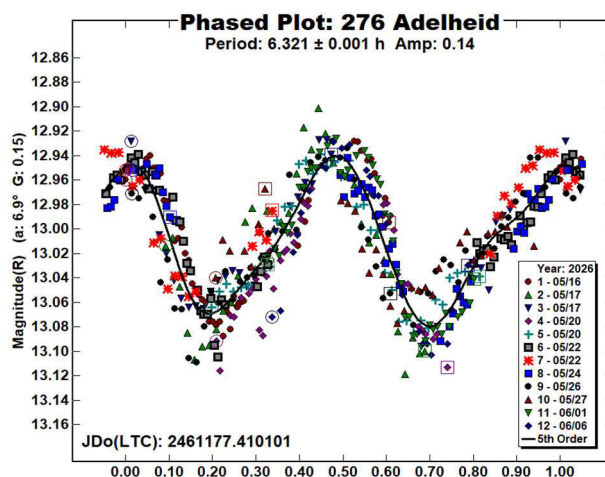
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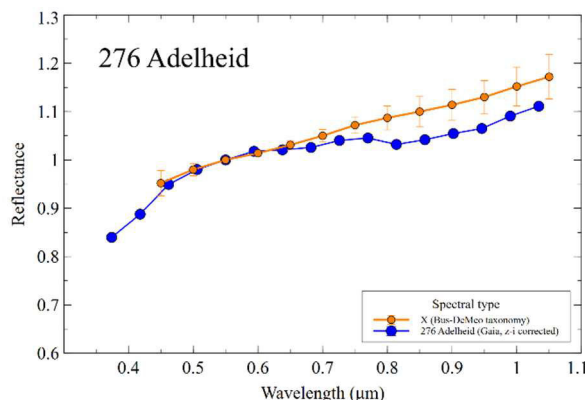
Photometric observations of six asteroids were collected to contribute to their physical characterization. Lightcurves were acquired for 276 Adelheid, 660 Crescentia, 1629 Pecker, 1684 Iguassu, 3909 Gladys, and (152637) 1997 NC1.

Collaborative asteroid photometry was conducted within the Italian Amateur Astronomers Union (UAI, 2026) to support their physical characterization. Table I shows the observing circumstances and results. The CCD/CMOS observations were made in 2026 April-June using the instrumentation described in Table II. Lightcurve analysis was done by M. Iozzi, A. Valvasori belonging to the UAI group (2026) 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*.

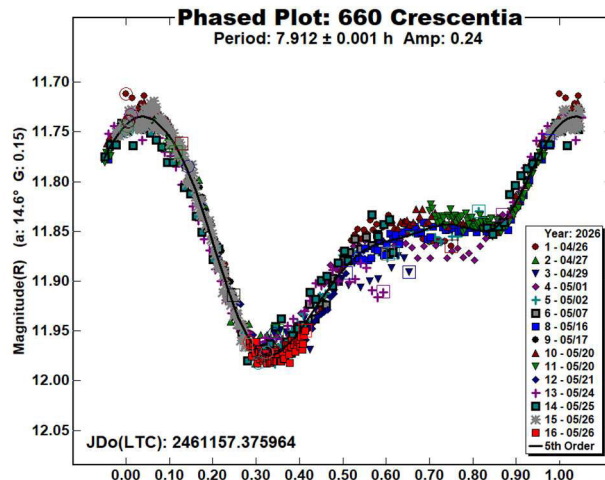
276 Adelheid is a low albedo outer main-belt asteroid classified as a X-Type in the Tholen taxonomy (Tholen, 1984). Collaborative observations were made over twelve nights. We found a bimodal solution with a synodic period of $P = 6.321 \pm 0.001$ h and an amplitude $A = 0.14 \pm 0.05$ mag. The period is close to the previously published results in the lightcurve database (Warner et al., 2009).



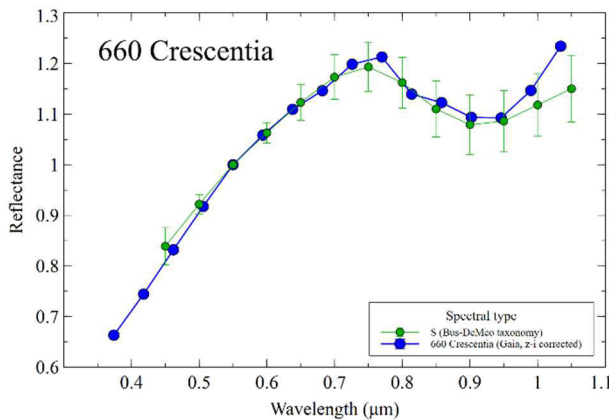
The reflectance spectrum for 276 Adelheid, retrieved from the Gaia ESA Archive (2025) and corrected for the $z-i$ parameter (Franco, 2025), is consistent with an X-type classification within the Bus-DeMeo taxonomy (DeMeo et al., 2009) and agrees with the taxonomic attribution by Franco (2025).



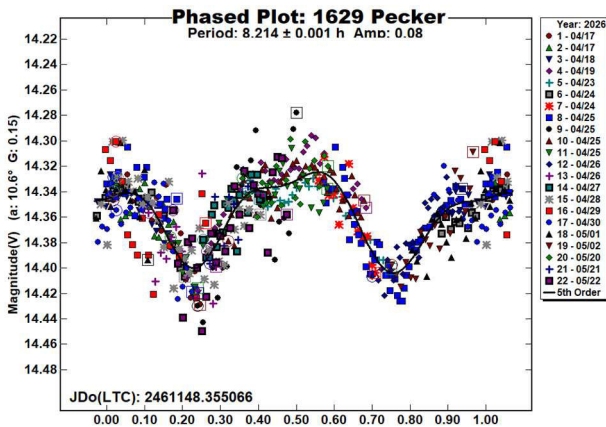
660 Crescentia is a medium albedo middle main-belt asteroid classified as a S-Type in the Tholen taxonomy (Tholen, 1984). Collaborative observations were made over sixteen nights. We found a bimodal solution with a synodic period of $P = 7.912 \pm 0.001$ h and an amplitude $A = 0.24 \pm 0.06$ mag. The period is close to the previously published results in the lightcurve database (Warner et al., 2009).



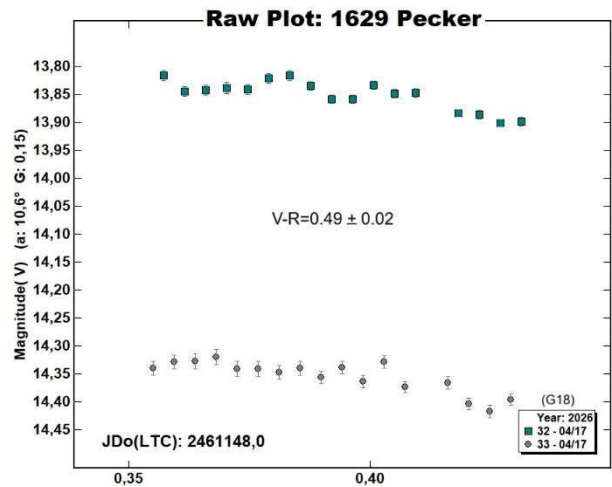
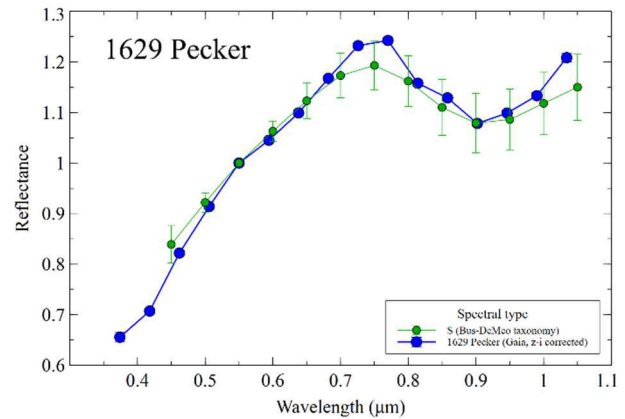
The reflectance spectrum for 660 Crescentia, retrieved from the Gaia ESA Archive (2025) and corrected for the z - i parameter (Franco, 2025), is consistent with an S-type classification within the Bus-DeMeo taxonomy (DeMeo et al., 2009) and agrees with the taxonomic attribution by Franco (2025).



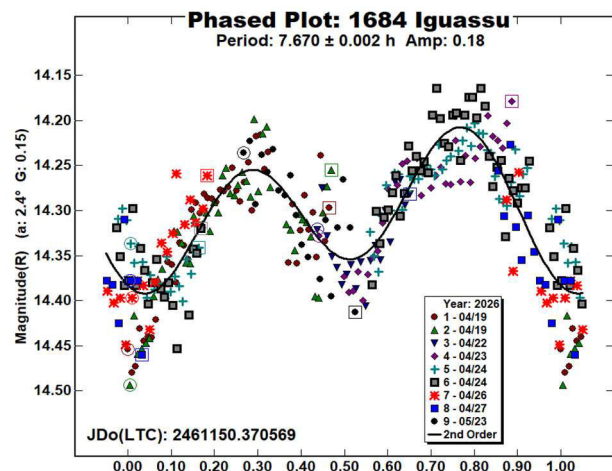
1629 Pecker is a medium albedo inner main-belt asteroid classified as a S-Type in the SMASS II taxonomy (Bus and Binzel, 2002). Collaborative observations were made over twenty-three nights. We found a bimodal solution with a synodic period of $P = 8.214 \pm 0.001$ h and an amplitude $A = 0.08 \pm 0.03$ mag. The period is close to the previously published results in the lightcurve database (Warner et al., 2009).



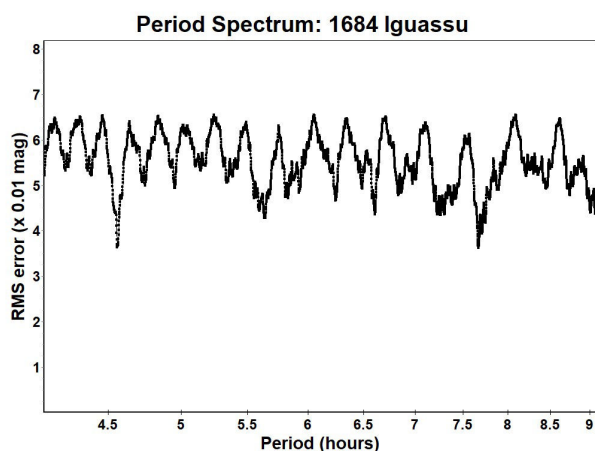
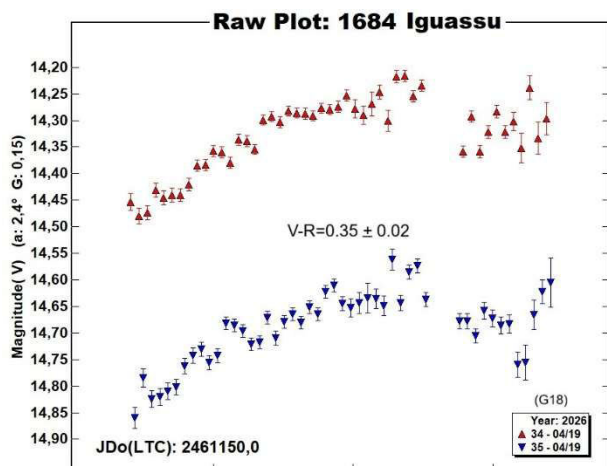
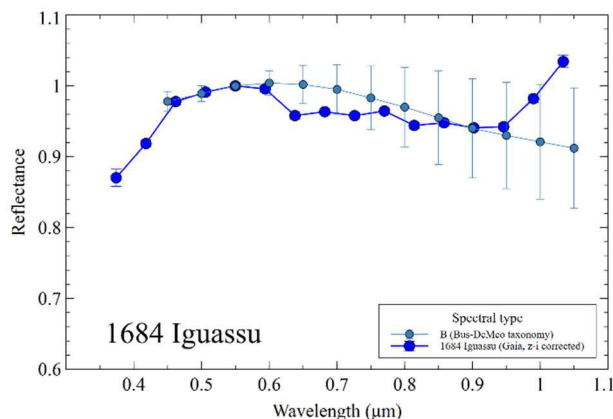
The reflectance spectrum for 1629 Pecker, retrieved from the Gaia ESA Archive (2025) and corrected for the z - i parameter (Franco, 2025), is consistent with an S-type classification within the Bus-DeMeo taxonomy (DeMeo et al., 2009) and agrees with the taxonomic attribution by Franco (2025). Multiband photometry was acquired by A. Valvasori (G18) and M. Iozzi (L63) from which we found a mean color index $V-R = 0.49 \pm 0.02$, consistent with an S-type asteroid (Shevchenko and Lupishko, 1998; 0.49 ± 0.05).



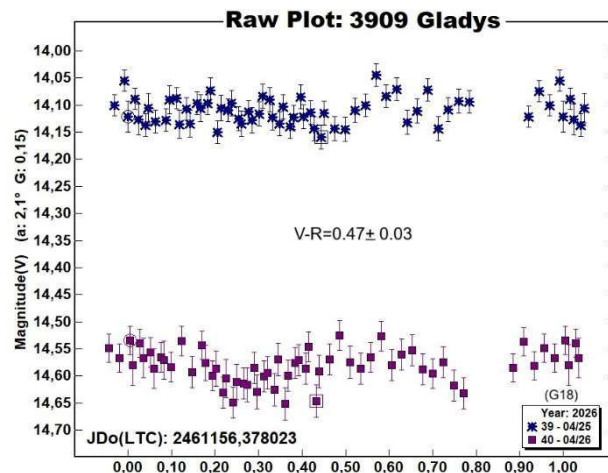
1684 Iguassu is low albedo inner main-belt asteroid. Collaborative observations were made over nine nights. The period spectrum shows minimum with a bimodal solution of $P = 7.670 \pm 0.002$ h and an amplitude $A = 0.18 \pm 0.04$ mag. This solution differs from the previously published results in the lightcurve database (Warner et al., 2009).



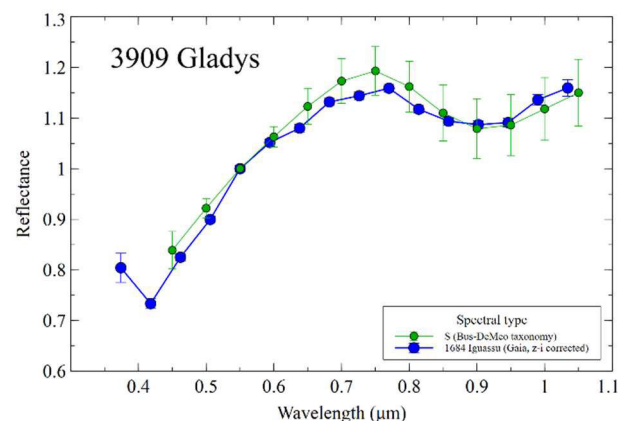
The reflectance spectrum for 1684 Iguassu, retrieved from the Gaia ESA Archive (2025) and corrected for the z-i parameter (Franco, 2025), is consistent with a B-type classification within the Bus-DeMeo taxonomy (DeMeo et al., 2009) and agrees with the taxonomic attribution by Franco (2025). Multiband photometry was acquired by A. Valvasori (G18) from which we found a mean color index $V-R = 0.35 \pm 0.02$, consistent with a C-type asteroid (Shevchenko and Lupishko, 1998; 0.38 ± 0.05).



3909 Gladys is a medium albedo middle main-belt asteroid. Collaborative observations were made over six nights. The reflectance spectrum for 3909 Gladys, retrieved from the Gaia ESA Archive (2025) and corrected for the z-i parameter (Franco, 2025), is consistent with an S-type classification within the Bus-DeMeo taxonomy (DeMeo et al., 2009) and agrees with the taxonomic attribution by Franco (2025).



Multiband photometry was acquired by A. Valvasori (G18) on 2026 April 25 and May 12 from which we found a mean color index $V-R = 0.47 \pm 0.03$, consistent with an S-type asteroid (Shevchenko and Lupishko, 1998; 0.49 ± 0.05).



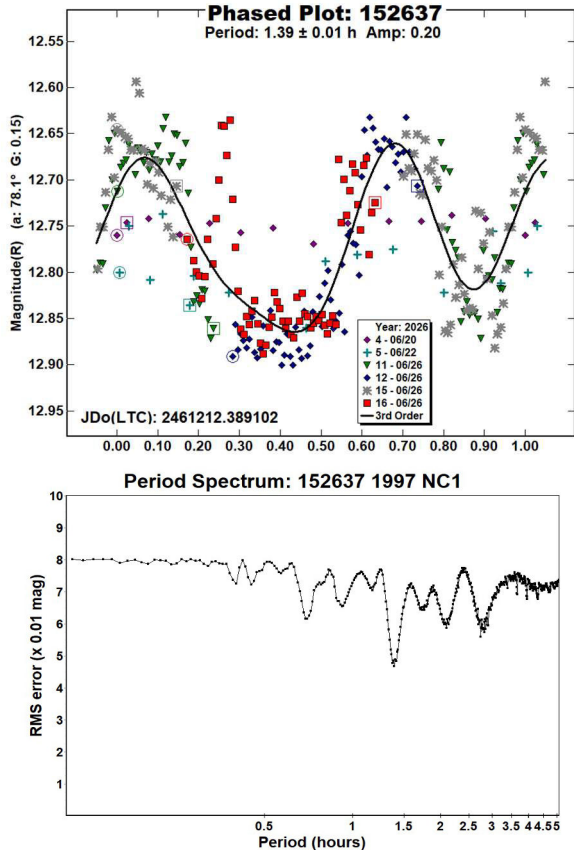
(152637) 1997 NC1 is an Aten Near-Earth asteroid and a Potentially Hazardous Asteroid (PHA), discovered by the NEAT survey at Haleakalā, Hawaii, on 1997 July 5, with $H = 17.87$ and a Minimum Orbit Intersection Distance (MOID) from Earth of 0.01671 au. Collaborative observations obtained over six nights during the asteroid's approach to its close encounter with Earth on 2026 June 27 (nominal geocentric distance 0.01715 au) yielded a bimodal lightcurve solution with a synodic rotation period of $P = 1.39 \pm 0.01$ h and a lightcurve amplitude of $A = 0.20 \pm 0.05$ mag. Under the assumption of a triaxial ellipsoid shape we derived a lower limit for the axis ratio of $(a/b) = 10^{(0.4A)} = 1.20$.

Number	Name	2026 mm/dd	Phase	L _{PAB}	B _{PAB}	Period(h)	P.E.	Amp	A.E.	Grp
276	Adelheid	05/16-06/06	*6.8- 6.8	247	16	6.321	0.001	0.14	0.05	MB-O
660	Crescentia	04/26-05/26	*14.6-12.0	237	20	7.912	0.001	0.24	0.06	MB-M
1629	Pecker	04/16-05/22	10.3-24.1	202	14	8.214	0.001	0.08	0.02	MB-I
1684	Iguassu	04/19-05/23	2.3-12.3	213	4	7.670	0.002	0.18	0.04	MB-O
3909	Gladys	04/17-05/16	2.1	219	0					MB-M
152637	1997 NC1	06/15-06/26	90.5-41.0	287	38	1.39	0.01	0.20	0.05	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/CMOS	Filters	Observed Asteroids (#Sessions)
Castelmartini (160)	0.25-m SCT f/6.3	ZWO ASI2600MM PRO	C	276 (6), 660 (8), 1629 (11), 1684 (4), 152637 (4)
Astronomical Observatory, University of Siena (K54)	0.30-m MCT f/5.6	SBIG STL-6303e (bin 2x2)	Rc	660 (3), 1629 (2), 3909 (2)
ALMO Observatory (G18)	0.30-m NRT f/4.0	ZWO ASI533MM PRO (bin 2x2)	V, Rc	1629 (2), 1684 (2), 3909 (2)
Iota Scorpii (K78)	0.40-m RCT f/6.1	CMOS QHY 268 (bin 4x4)	Rc	276 (4), 1629 (1)
GiaGa Observatory (203)	0.36-m SCT f/5.8	Moravian G2-3200	C	660 (2), 152637 (1)
Osservatorio Astronomico Nastro Verde (C82)	0.35-m SCT f/6.3	SBIG ST10XME (bin 2x2)	C	276 (2), 1629 (1)
Osservatorio Aldebaran (D31)	0.36-m SCT f/6.8	QHY268M	Rc	1629 (1), 1684 (2)
Zen Observatory (M26)	0.30-m RCT f/7.4	ATIK 383L+ (bin 2x2)	C	1629 (1), 152637 (1)
HOB Astronomical Observatory (L63)	0.20-m SCT f/6.0	ATIK 383L+ (bin 2x2)	V, Rc	1629 (1)

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



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