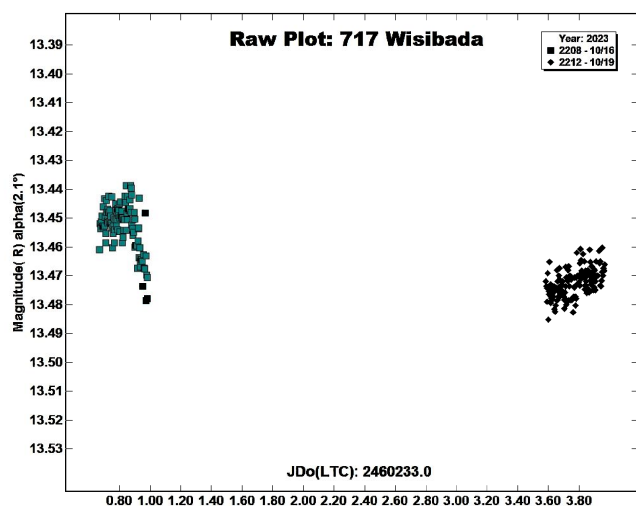
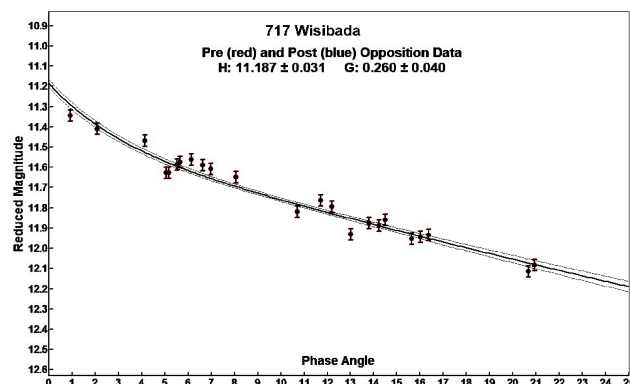
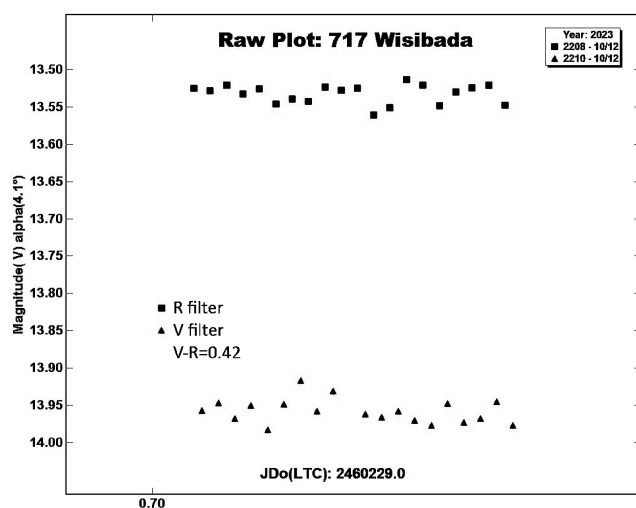




Petr Pravec kindly examined all of our data and concludes:

Indeed, it is a tough case for its low amplitude (most of the time) and probably a long-ish period. It would be needed to get homogeneous data taken with a single camera+filter combination and absolutely calibrated with a high accuracy, resulting in a consistency of the data over all nights on a level of a 0.02 mag or so. Unless you can get such highly homogeneous data, I'm afraid that the case cannot be solved.

On 2023 Oct. 12, twenty images were obtained alternately with the R and V filters. Both image sets were measured with the same calibration stars. The method of extracting their R and V colors is explained in Pilcher et al. (2016). The composite lightcurve shows that $V - R = 0.42$. The calibrated R magnitudes found for each session were converted to V magnitudes by adding 0.42. An $H - G$ plot in the V band shows that $H = 11.187 \pm 0.031$, $G = 0.260 \pm 0.040$.



Acknowledgments

The authors thank Lorenzo Franco for preparing the $H - G$ diagram and Petr Pravec for his independent analysis of our data.

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CALL FOR OBSERVATIONS

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(Received: 2024 January 9)

Observers who have made visual, photographic, or CCD measurements of positions of minor planets in calendar 2023 are encouraged to report them to this author on or before 2024 April 15. This will be the deadline for receipt of reports which can be included in the "General Report of Position Observations for 2023," to be published in *MPB* Vol. 51, No. 3.

LIGHTCURVE AND ROTATION PERIOD OF 358 APOLLONIA

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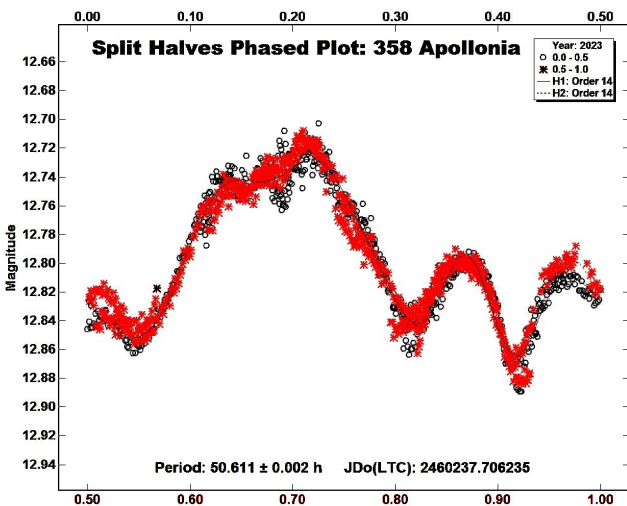
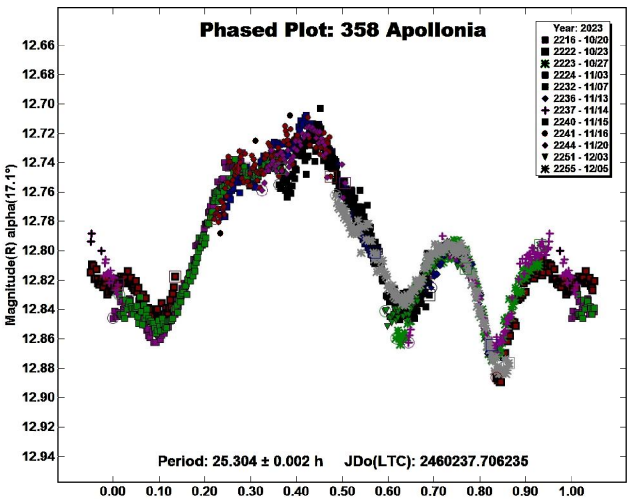
For 358 Apollonia we find a synodic rotation period of 25.304 ± 0.002 hours, amplitude 0.16 ± 0.02 magnitudes, and an irregular lightcurve for our observations near celestial longitude 65 degrees.

The observations by Pilcher to produce the results reported in this paper were made at the Organ Mesa Observatory with a Meade 35 cm LX200 GPS Schmidt-Cassegrain, SBIG STL-1001E CCD, 60 to 120 second exposures, unguided, clear filter. Observations by Delgado are with an 11-inch Celestron Schmidt-Cassegrain, Atik 4.14 EX CCD, 60 to 120 second exposures.

Image measurement and lightcurve construction were with *MPO Canopus* software with calibration star magnitudes for solar colored stars from the CMC15 catalog reduced to the Cousins *R* band. To reduce the number of data points on the lightcurves and make them easier to read, data points have been binned in sets of 3 with maximum time difference 5 minutes.

358 Apollonia. The Asteroid Lightcurve Database (Warner et al., 2009) lists two previous rotation period determinations. Buchheim (2009) published a synodic period of 50.6 hours, amplitude 0.12 magnitudes, with a symmetrical but nonuniform lightcurve that looks as if it could be phased to half of that period with a comparably good fit. Durech et al. (2020) published a sidereal period of 25.3108 hours.

New observations obtained on 12 nights 2023 Oct. 20 - Dec. 5 provide an excellent fit to an irregular lightcurve with synodic period 25.304 ± 0.002 hours and amplitude 0.16 ± 0.02 magnitudes. A split halves plot shows that the entire 50.611-hour double period was sampled and that the two halves are identical within observational error and reasonable lightcurve shape change between phase angles 17.1° and 3.0° . The double period is ruled out and a period of 25.304 hours may be considered secure. This period is consistent with Durech et al. (2020) and with Buchheim (2009) if his lightcurve data are rephased to 25.3 hours.



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Number	Name	yyyy/mm/dd	Phase	LPAB	BPAB	Period(h)	P.E	Amp	A.E.
358	Apollonia	2023/10/20-2023/12/05	*17.1 - 3.0	65.5	-4.3	25.304	0.002	0.16	0.02

Table I. Observing circumstances and results. The phase angle is given for the first and last date. Preceded by an asterisk indicates the phase angle reached a minimum during the period. LPAB and BPAB are the approximate phase angle bisector longitude and latitude at mid-date range (see Harris et al., 1984).