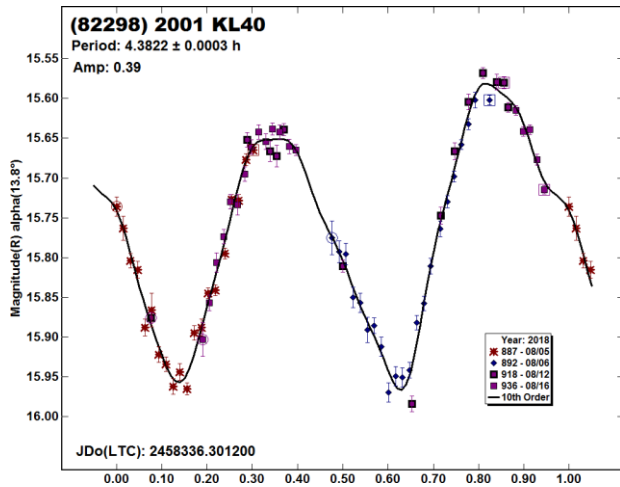


(82298) 2001 KL40. Prior to this work there were no rotation period determinations on this main-belt asteroid. The photometric observations were carried out at SAO in 2018 August on 4 nights. Period analysis resulted in a bimodal lightcurve with an amplitude of 0.39 mag. and a period of 4.3822 ± 0.0003 h.



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ROTATION PERIOD DETERMINATION FOR 5351 DIDEROT AND 7230 LUTZ

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Photometric observations of two main-belt asteroids were conducted from the Astronomical Observatory of the University of Siena (Italy) in order to determine their synodic rotation periods. For 5351 Diderot we found a period of 9.984 ± 0.003 hr with an amplitude of 0.45 ± 0.01 mag; for 7230 Lutz we found a period of 5.682 ± 0.007 hr with an amplitude of 0.18 ± 0.02 mag.

CCD photometric observations of two main-belt asteroids were carried out in 2018 April and October at the Astronomical Observatory of the University of Siena (K54) at the Department of Physical Sciences, Earth and Environment (DSFTA, 2018). We used a 0.30-m *f*/5.6 Maksutov-Cassegrain telescope, a SBIG STL-6303E CCD camera, and clear or R filter. The pixel scale was 2.30 arcsec when binned at 2x2 pixels. All exposures were 300 sec. Data processing and analysis were done with *MPO Canopus* (Warner, 2017). All the images were calibrated with dark and flat-field frames and converted to R magnitudes using solar-colored field stars from a version of the CMC-15 catalogue distributed with *MPO Canopus*. Table I shows the observing circumstances and results.

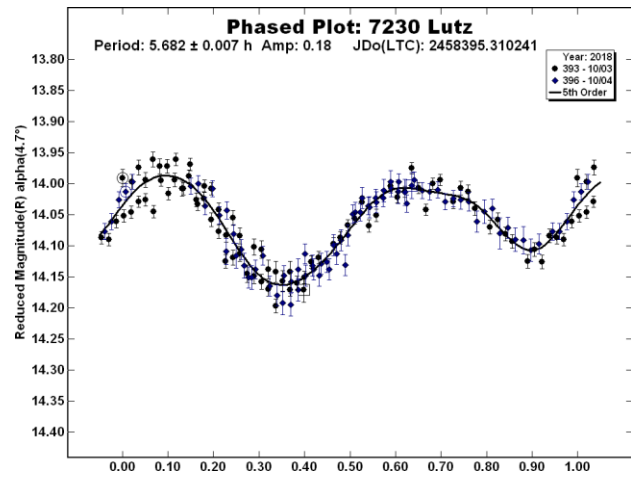
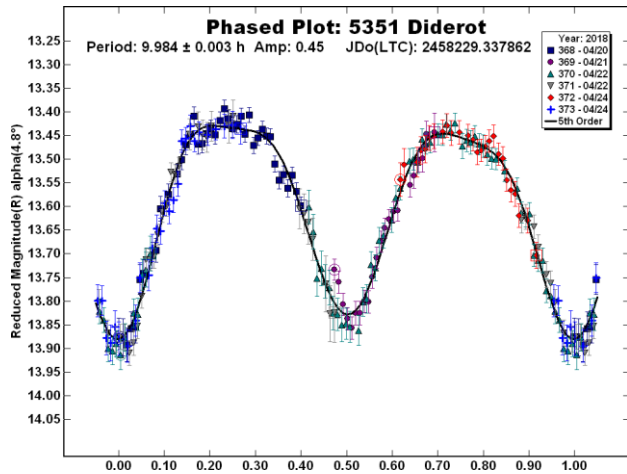
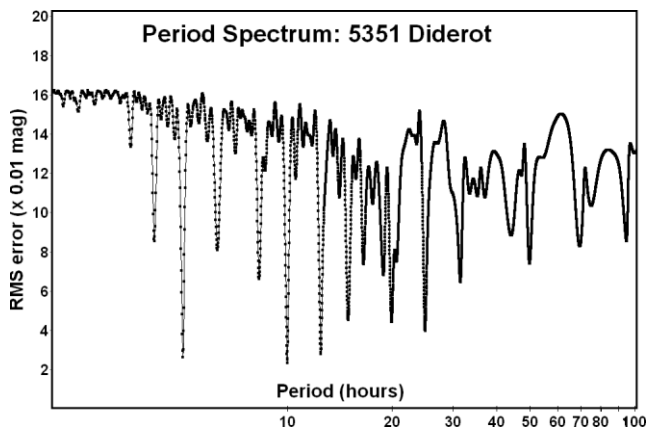
A search through the asteroid lightcurve database (LCDB; Warner et al., 2009) indicates that our results may be the first lightcurve observations and results for these objects, which were chosen from the list of lightcurve photometry opportunities in the *Minor Planet Bulletin* (Warner et al., 2018a; 2018b).

5351 Diderot (1989 SG5) was discovered on 1989 Sep 26 at La Silla by E.W. Elst. It was named in memory of Denis Diderot (1713-1784), a French author of dramas, novels and philosophical essays. It is a main-belt asteroid with a semi-major axis of 2.426 AU, eccentricity 0.144, inclination 5.596 deg, and an orbital period of 3.78 years. Its absolute magnitude is $H = 13.2$ (JPL, 2018; MPC, 2018). The WISE satellite infrared radiometry survey (Masiero et al., 2011) found a diameter $D = 3.66 \pm 0.15$ km using an absolute magnitude $H = 13.0$. From these, an optical albedo of $p_V = 0.83 \pm 0.14$ was derived.

Our observations were conducted on four nights from 2018 April 20-24 and led to 217 data points. The period analysis shows a bimodal solution for the rotational period $P = 9.984 \pm 0.003$ hr with an amplitude $A = 0.45 \pm 0.01$ mag.

Number	Name	2018/mm/dd	Pts	Phase	L _{PAB}	B _{PAB}	Period(h)	P.E.	Amp	A.E.
5351	Diderot	04/20-04/25	217	4.8, 4.5	214	7	9.984	0.003	0.45	0.01
7230	Lutz	10/03-10/05	157	4.8, 3.9	17	-1	5.682	0.007	0.18	0.02

Table I. Observing circumstances and results. Pts is the number of data points. The phase angle is given for the first and last date. L_{PAB} and B_{PAB} are the approximate phase angle bisector longitude and latitude at mid-date range (see Harris *et al.*, 1984).



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7230 Lutz (1985 RZ1) was discovered on 1985 Sep 12 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. It is named after Barry L. Lutz (b. 1944), professor of physics and astronomy and department chair at Northern Arizona University. It is a main-belt asteroid with the semi-major axis of 2.373 AU, eccentricity 0.241, inclination 3.14 deg, and an orbital period of 3.66 years. Its absolute magnitude is $H = 13.8$ (JPL, 2018; MPC, 2018).

Observations of this asteroid were conducted on two nights, 2018 Oct 3 and 4, and provided 157 data points. The period analysis shows a bimodal solution for the rotational period $P = 5.682 \pm 0.007$ hr with an amplitude $A = 0.18 \pm 0.02$ mag.

