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Introduction: Solar-heated surface of an asteroid re-emits the thermal photons that cause reactive forces, which ultimately act on changing both the speed of rotation of the asteroid and the position of its axis of rotation [1]. It is a very weak effect, and its influence becomes noticeable only over a secular time interval [2]. This effect, called YORP, can increase or decrease the asteroid rotation speed. The effect depends on the size of the asteroid and its distance from the Sun, and it is determined by the shape of the asteroid. In addition, it also depends on the structure and optical properties of the surface [3]. Moreover, YORP can modify the orbital parameters of binary asteroids, the so-called BYORP effect [4].

The available shape model and the surface albedo allow calculating the expected influence of the YORP effect on the value of the period of rotation. The effect can be directly detected on real asteroids in real time by measuring the rotation speed variations using lightcurve photometry [5]. If obtained at sufficiently large intervals of time (several years to several decades), the lightcurves of the asteroid make it possible to determine the sidereal period with accuracy greater than the period change caused by the effect during this time. We can determine the value of YORP during constraining a physical model of the asteroid by lightcurve inversion method. If the effect is valid, then the observational data are better fitted by the model under an assumption of linear change of the sidereal rotation period P in time t. In the terms of the rotation speed $w = 2\pi/P$, it can be expressed as: $w(t) = w(t_0) + v(t-t_0)$, where $v = \mathrm{d}w/\mathrm{d}t$ is a constant with dimensions of rad day^{-2} , which stands for YORP [6].

YORP observing programme: In Kharkiv Astronomical Observatory we started the special observing programme to obtain more photometric data for NEAs whose rotation periods could be tested for the influence of YORP. In the last years, these asteroids have been started to be observed within the framework of the ISON network (International Scientific Optical Network).

Objects monitored in the frame of the programme were NEAs with a long observation time, for which shape models were constrained and values of the YORP effect can be estimated [7]. Long intervals between individual observations are needed to obtain an accuracy of rotation period, which is necessary to determine the effect. The value of the effect for a small asteroid could be so significant that it is possible to register the influence after time interval of a few years [8]. The most noticeable value of the effect is expected to be found for bodies with irregular shapes and diameters no more than a few kilometers, which could closely approach the Earth, and hence they are convenient objects for our observations. We do observations of co-orbital NEAs with orbital periods close to the Earth year, which can be observed year after year under the same aspect of view.

Results: We have observed many NEAs to demonstrate the YORP effect, and between them: (1862) Apollo [6], (1620) Geographos [9], (3103) Eger [10], and (1685) Toro [11] for which the effect was discovered; and also (1865) Cerberus, and (2100) Ra-Shalom [10] for which the effect was predicted from shape models while changes of rotation periods were not registered. The photometric data were obtained for several well-known binary NEAs, and for (175706) 1996 FG3 the existence of the BYORP effect has been verified [12].

Here we show and analyze the physical parameters of observed NEAs with the detected or predicted YORP effect.

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