Simultaneous Spectroscopic and Photometric Observations of Binary Asteroids. D. Polishook[1,2], N. Brosch[2] and S. Kaspi[2], [1]*Department of Geophysics and Planetary Sciences, Tel-Aviv University, Tel-aviv 69978, Israel*, [2]*The Wise Observatory and the Raymond and Beverly Sackler School of Physics and Astronomy, Tel-Aviv University, Tel-aviv 69978, Israel*.

We present results of visible wavelength spectroscopic measurements (0.4 to 0.8 microns) of 2 binary asteroids obtained with the 1-m telescope at the Wise Observatory on January 2008. The asteroids *(90) Antiope* and *(1509) Esclangona* were routinely observed to look for spectroscopic differences while rotating and presenting different regions of their surface. We simultaneously used Wise Observatory's 0.46-m telescope to photometrically follow-up the asteroids to gain knowledge on the behavior of the asteroids' rotation phase and possible eclipse events while performing the spectroscopic observations.

(90) Antiope showed an eclipse event with amplitude of 0.70±0.1 mag as previously described by Descamps et al. [1]. This C-type binary asteroid located within the outer main belt (a=3.16 AU) has synchronous periods of about 16.5 hours of its equal-sized components. Using the models of Descamps et al. [1] we can assume that the eclipse was close to total. We could not measure any change within the slope of the spectroscopic albedo except for the seatdy decrease in the total light flux while the eclipse took place. Therefore we conclude that the surface compositions of the two components do not differ dramatically, implying a common origin and history.

(1509) Esclangona, an S-type asteroid from the Hungaria group (a=1.87 AU), was first revealed as a binary asteroid by Merline et al. [2] using high resolution observations. Durda et al. [3] suggested that due to the wide separation between the two components (~23 primary radii), *(1509) Esclangona* is comprised of two ejecta fragments that escaped a catastrophic disruption and became bound to each other due to similar escaping trajectories. Our photometric lightcurve of *(1509) Esclangona* shows unique lightcurve with five different peaks that repeat themselves with a period of 3.254 hours (Fig. 1). Here again, no change within the slope of the spectroscopic albedo was measured except for the steady decrease in the total flux as exhibited by the lightcurve. This result suggests that the different features on the lightcurve are produced by the asteroid shape that has a non-convex shape possibly caused by its collisional history.

References: [1] Descamps P. et al. (2007) *Icarus, 187,* 482–499. [2] Merline W. J. (2003) *DPS #35,* 972. [3] Durda D. D. et al. (2004) *Icarus, 167,* 382-396.

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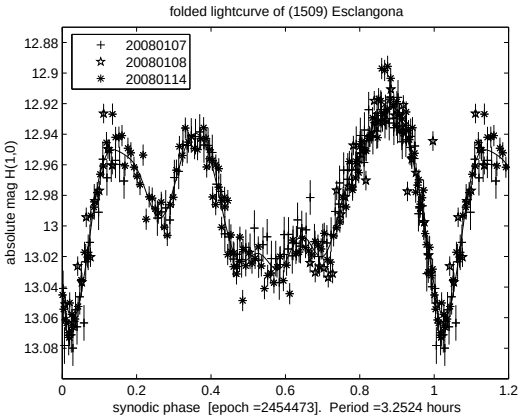

Fig. 1: Lightcurve of *(1509) Esclangona* folded with a period of 3.254 hours, exhibiting five different peaks.