The near-Earth asteroid (436724) 2011 UW158 was discovered on 2011 Oct 25 by the Pan-STARRS observatory at Haleakula, Hawaii, USA. This object has a relatively low delta-V for spacecraft missions (11.96 km/s) and is a Super-Fast Rotator (436724) 2011 UW158 with a sidereal period of 0.610752 ± 0.000001 h. So, for small bodies (0.15 km < D < 10 km) with rubble-pile structure, the presence of even a very small amount of strength allows the asteroid to rotate super-fast.

The presence of cohesion forces begins to be important only for objects with diameter D > 10 km. For example, the near-Earth asteroid (436724) 2011 UW158 with a diameter of about 600 x 300 m has a relatively low delta-V for spacecraft missions (11.96 km/s) and is a Super-Fast Rotator (436724) 2011 UW158 with a sidereal period of 0.610752 ± 0.000001 h and a shape model qualitatively consistent with radar observations.

The asteroid 2011 UW158 was first observed by Gary with unfiltered CCD images calibrated using \( r \)-mag of APASS stars in the UAC4 catalog (Gary, 2016). The best shape model for this asteroid (the n. 24 in our data processing), which is the same solution using all data (Carbognani et al., 2016), shows a rather elongated object in rotation around the minor axis (Fig. 7). This result is consistent from the physical point of view and in agreement with the large LC amplitudes (~2 mag) found on some dates. This shape is also in agreement with the radar observations (Fig. 8). This test showed the shape model by computing synthetic lightcurves with observed ones. The shape model produces synthetic lightcurves that are in good agreement with observed lightcurves (Carbognani et al., 2016).

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