

# COLLABORATIVE ASTEROID PHOTOMETRY FOR 3653 KLIMISHIN, 4748 TOKIWAGOZEN AND 9951 TYRANNOSAURUS

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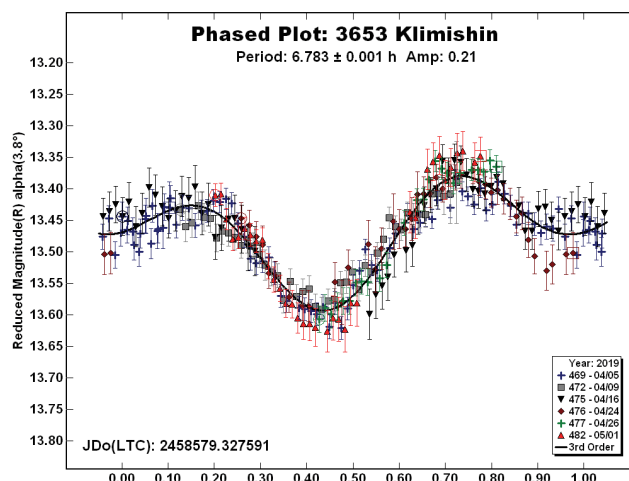
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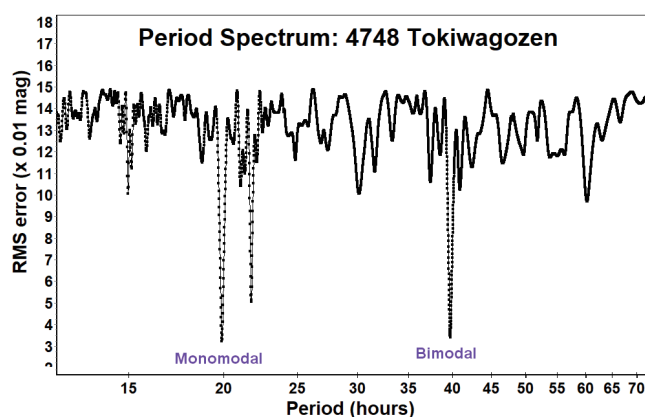
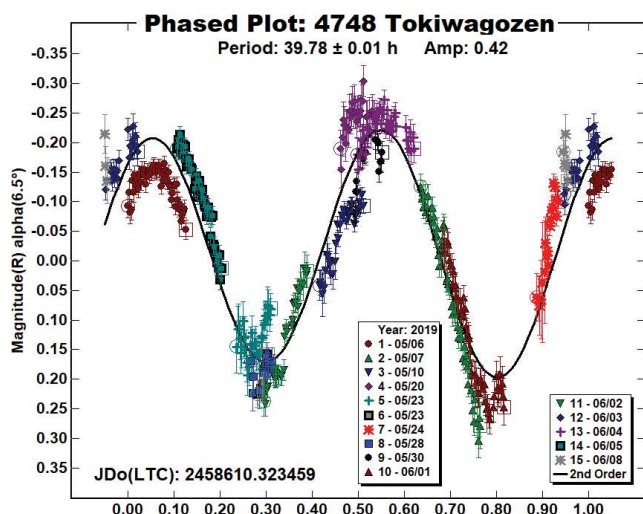
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Photometric observations of three main-belt asteroids were made in order to acquire lightcurves. The synodic period and light curve amplitude were found for: 3653 Klimishin  $6.783 \pm 0.001$  h, 0.21 mag; 4748 Tokiwagozen  $39.78 \pm 0.01$  h, 0.42 mag.; 9951 Tyrannosaurus  $3.767 \pm 0.004$  h, 0.21 mag. Asteroid 4748's lightcurve shows a few interesting features which suggest the opportunity of further observations in order to verify a possible "tumbling" nature.

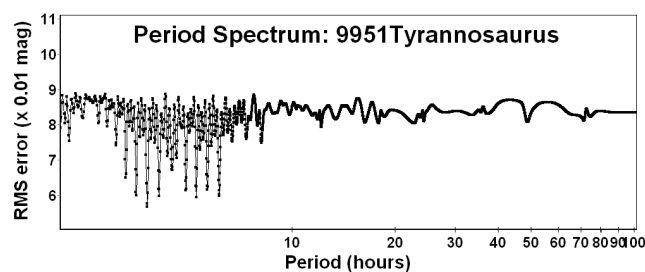
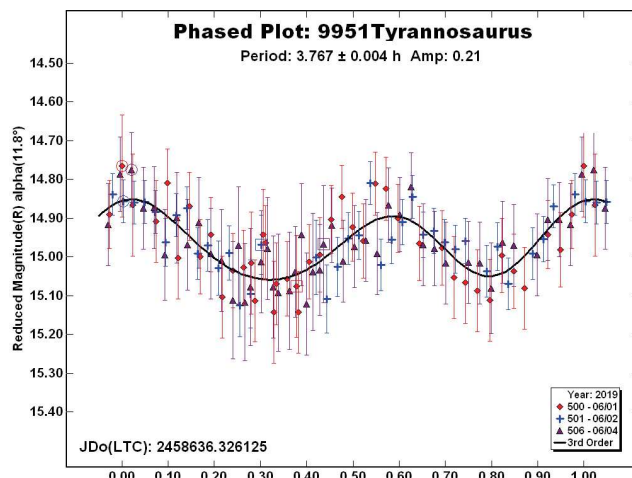
Collaborative asteroid photometry was made in the second quarter of 2019. The targets were selected in order to acquire lightcurves for determining their rotational period. The CCD observations were performed in April-June 2019 using the instrumentation described in the Table I. Lightcurve analysis was done with MPO Canopus (BDW Publishing, 2018). All the images were calibrated with dark and flat frames and converted to R magnitudes using solar colored field stars from CMC15 catalogue, distributed with MPO Canopus. Table II shows the observing circumstances and results.

3653 Klimishin is a main belt asteroid discovered on April 25 1979, by N. Chernykh, at Nauchnyj. Collaborative observations were made over six nights. We found a synodic period of  $P = 6.783 \pm 0.001$  h with an amplitude  $A = 0.21 \pm 0.02$  mag.





9951 Tyrannosaurus was discovered on November 15 1990 by E. W. Elst at the European Southern Observatory. Collaborative observations were performed over three nights. We found a synodic rotation period of  $P = 3.767 \pm 0.004$  h with an amplitude  $A = 0.21 \pm 0.06$  mag.



#### Acknowledgements

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#### References

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