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Abstract: Co-authors: Pieter Degroote, Kyle Conroy, Andrej Prsa, Kelly Hambleton, Joe Giammarco, Herbert Pablo

Phoebe, which was based on the Wilson-Devinney code, is one of the most-used tools to study light curves of eclipsing binaries. Due to the unprecedented quality and temporal coverage of Kepler's observations, and the sheer variety in systems and physical phenomena the satellite has observed, modellers hit the limitations of the original Phoebe. In this contribution we present Phoebe 2.0, which was developped from scratch to address the new needs of the binary star and exoplanet communities. Phoebe 2.0 includes new physics, such as light travel time delays, Doppler beaming, dipolar magnetic fields, reflection and heat redistribution; as well as more advanced modelling techniques than the previous version, such as better limb darkening models, and improved meshing and fitting strategies. The code was built with flexibility and extendibility in mind. It can not only model eclipsing binaries, but also multiple stars, planetary transits, pulsating stars in eclipsing binaries, single rotating stars, accretion discs and misaligned binaries. The code comes with a Python-scriptable interface, as well as a GUI that also makes it suitable for student projects.
Ever wondered what the light curve, or the Rossiter-McLaughlin effect, of a Ferrari eclipsing a rotating UFO looks like? Phoebe 2.0 is the toolbox you need!