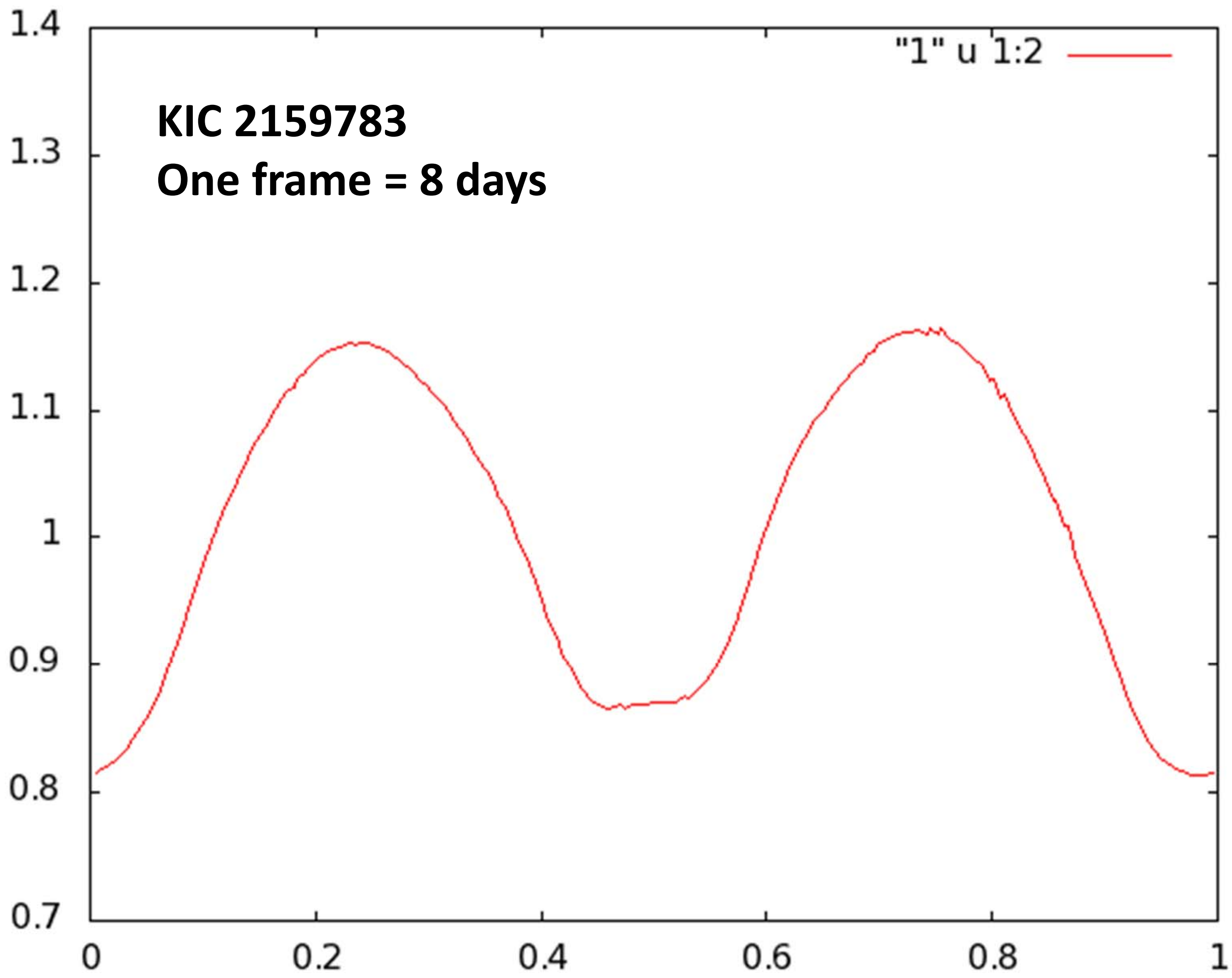
Starspots on an extremely close binaries: Spectroscopy vs continuous photometry

Bartlomiej Debski

Astronomical Obserwatory of the Jagiellonian University,
Krakow, Poland

- ✓ Kepler Mission: about 500 `contact binaries`
- ✓ Light curves evolve intrinsically in a timescale of weeks, months
- ✓ The LC variations are caused by a changing photospheric activity
- ✓ Evolving starspots! Stationary and migrating starspots!

Light curve continuous evolution



single filter photometry

- Starspot existence
- Migration of starspots
- Evolution of a stationary spot
- Which component is more massive
- Timescale of magnetic activity
- Activity cycles!
- Constraints on starspot size, temperature, **latitude**

Ordinary modeling: days/weeks
LC Morphology analysis: **half an hour**

Need for **spectroscopic confirmation** BEFORE the beginning of missions like WFIRST, PLATO, TESS...