

ASSIGNMENT #5: KEPLER PHOTOMETRY

Due date: Apr 25, 2018

Feel like hunting for treasure? There is no better loot than finding planets and other gems in the *Kepler* data!

- a) Download the core files from the course webpage. Import them into `kephem.py` and play around with them. Describe the basic properties of each provided light curve.
- b) Determine the ephemerides for each system. If you cannot determine the ephemeris for any given system, discuss why.
- c) Interpret the nature of the object that produces the light curve. Provide one paragraph per object that discusses the physical reason for its light curve variability.
- d) Look up the objects in the literature (ADS is your friend). Are there any surprises?
- e) Extend the time base by downloading additional quarters of data. Does that help the ephemeris? Can you find the super-Earth?
- f) *Extra credit:* Download additional *Kepler* data for other variability types and discuss them in your report.