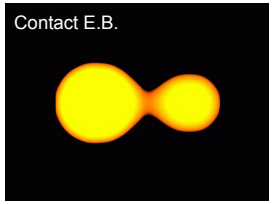
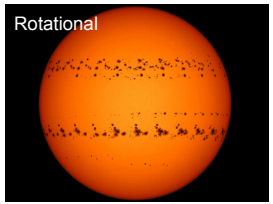
Kepler Light Curves

Sample Train Size	Sample Test Size	Number of Classes	Total Stars Observed
1,319 (≅ 70%)	515 (≅ 30%)	7	≅ 12,000

Task: Aims to predict a star's type using time-series data from its single light curve.



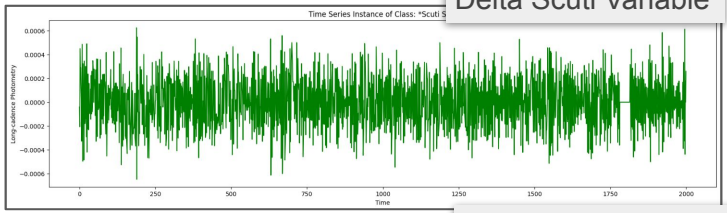


Recording: Data was collected by NASA's Kepler Space Telescope, with each light curve containing **4,767 samples** (no segmentation).
The dataset consists of long-cadence photometry, a measurement of a star's brightness captured at a sampling rate of 29.45 minutes per sample over a 3-month period (**2.70Hz**).

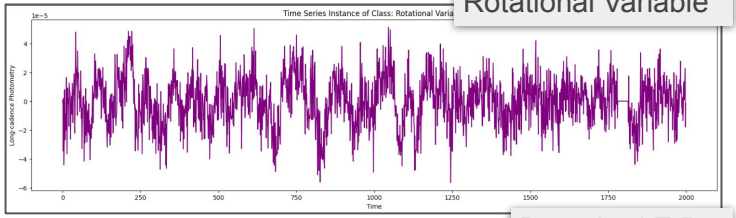
Classification: 7 star classes based on the its fluctuation in brightness, with the highest and lowest distributions shown below:

- Contact eclipsing binary
- Detached eclipsing binary
- **Delta Scuti variable (≅ %31)**
- Gamma Doradus variable
- Non variable
- Rotational variable
- **RR Lyrae variable (≅ 1.9%)**

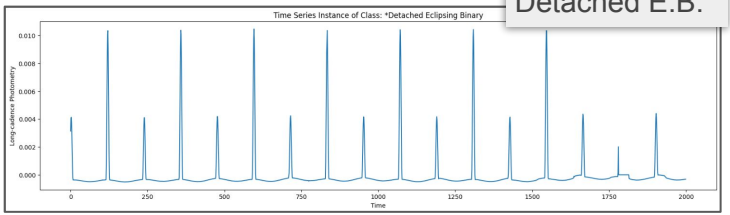
Delta Scuti Variable



Rotational Variable



Detached E.B.



N. H. Barbara, T. R. Bedding, B. D. Fulcher, S. J. Murphy, and T. Van Reeth, "Classifying Kepler light curves for 12 000 A and F stars using supervised feature-based machine learning," Monthly Notices of the Royal Astronomical Society, vol. 514, no. 2, pp. 2793–2804, Jun. 2022