Time Series Analysis Using Machine Learning
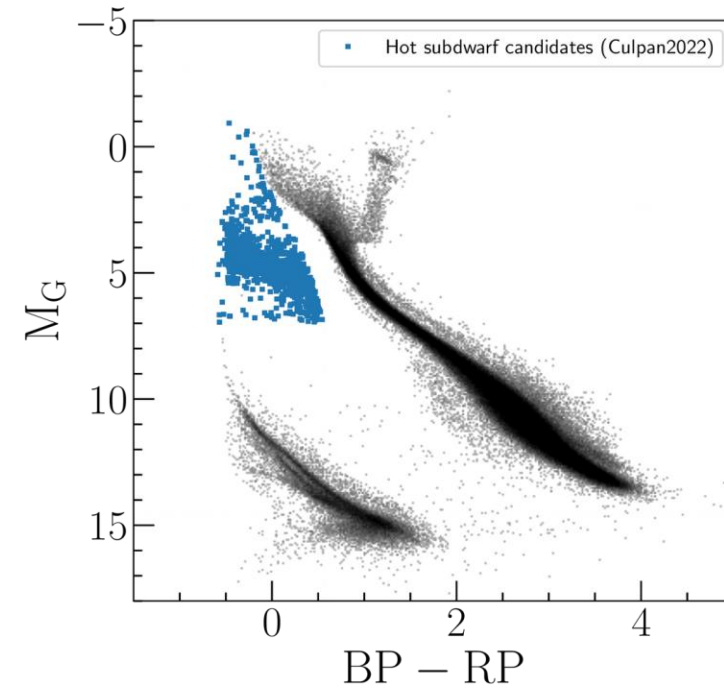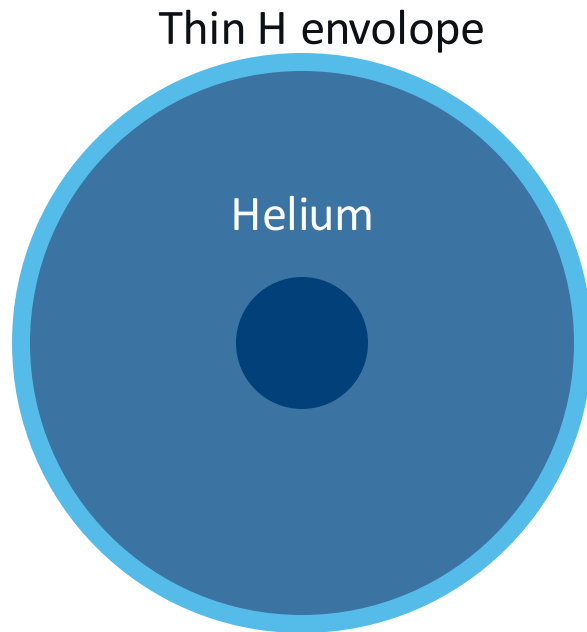
Exploring the Variability of Hot Subdwarfs from Gaia DR3 Epoch Photometry

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1. Hot subdwarfs

Hot subdwarfs, blue compact stars at a late evolutionary stage..

Thin H envolope

Helium

- A high fraction of hot subdwarfs are in binary systems.

- They exhibit **reflection effects**, **ellipsoidal variations**, and **pulsations** that offer insights into their structure and evolution.

2. Identification of Variable Hot Subdwarfs

Using 27 statistical features from Gaia and this work
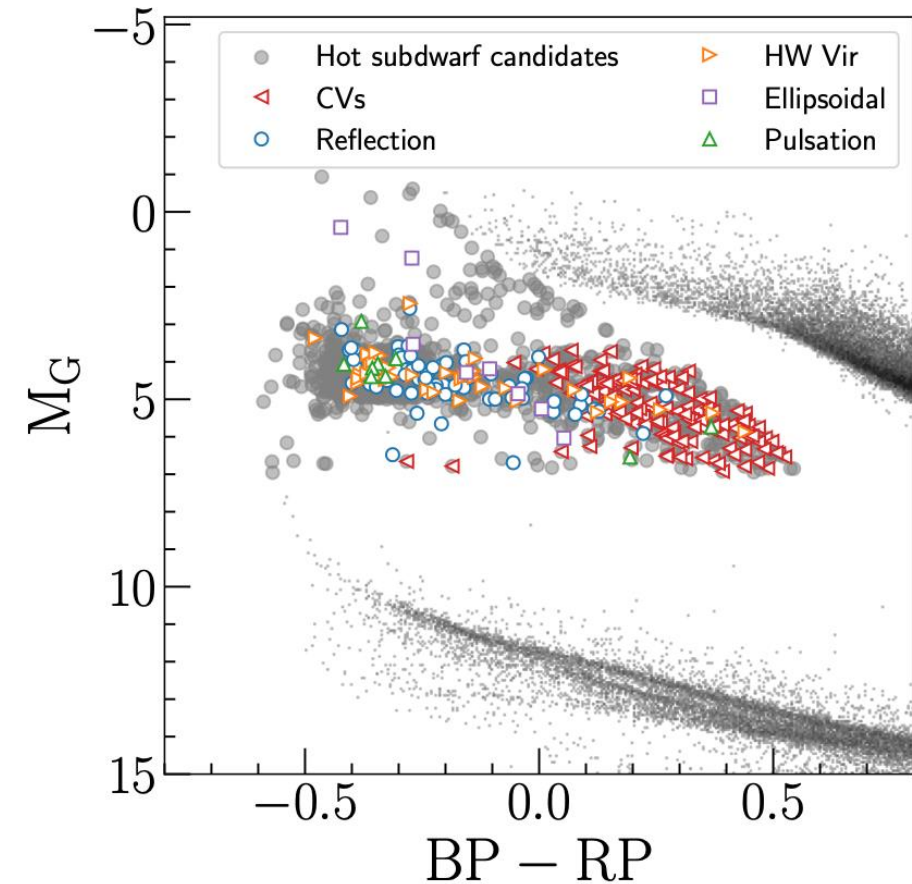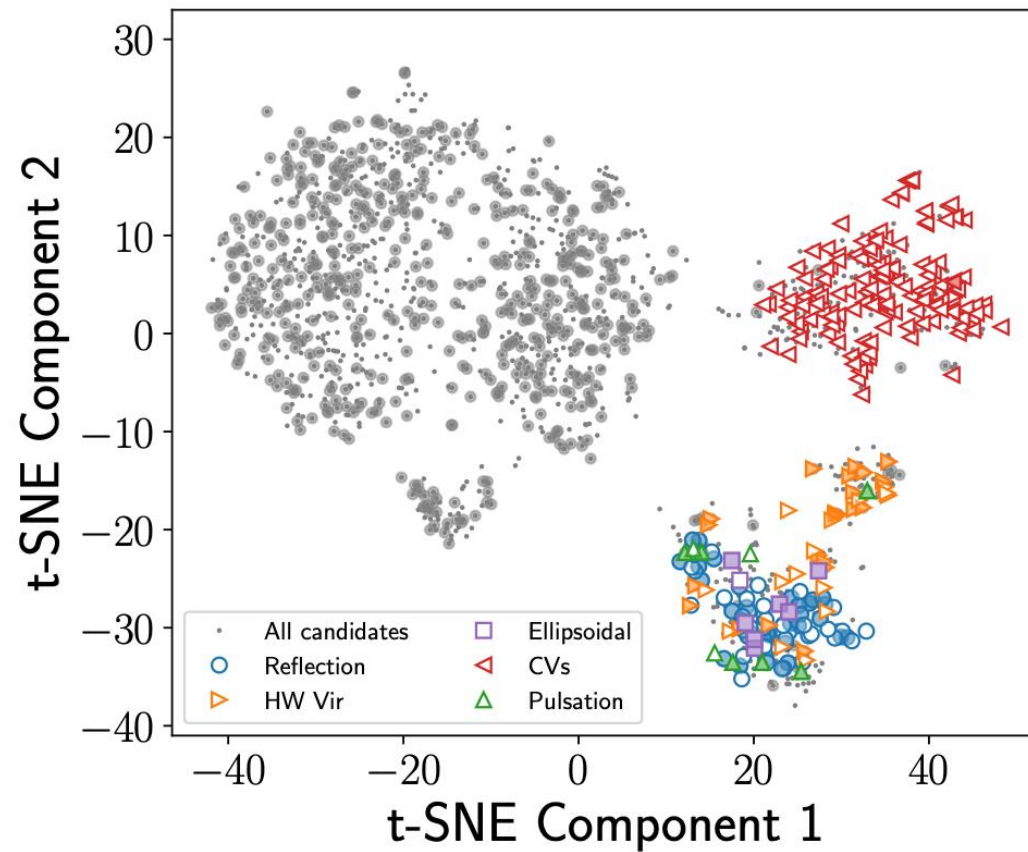
Summary and future prospects

- We identified 156 new variable hot subdwarfs, as well as 152 CV candidates.

- The clustering approach used in this study is a powerful tool for target selection, particularly in discriminating hot subdwarfs from CVs.

Future prospects include incorporating additional data from ground-based surveys and developing automated classification algorithms based on our t-SNE results.