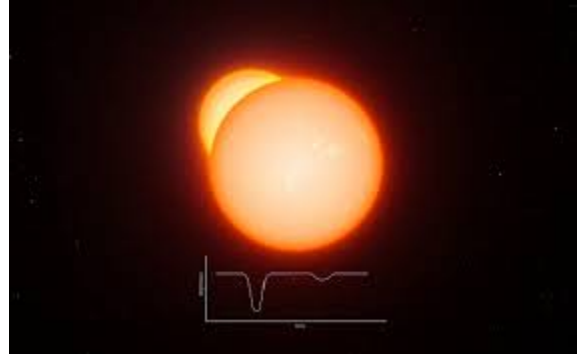


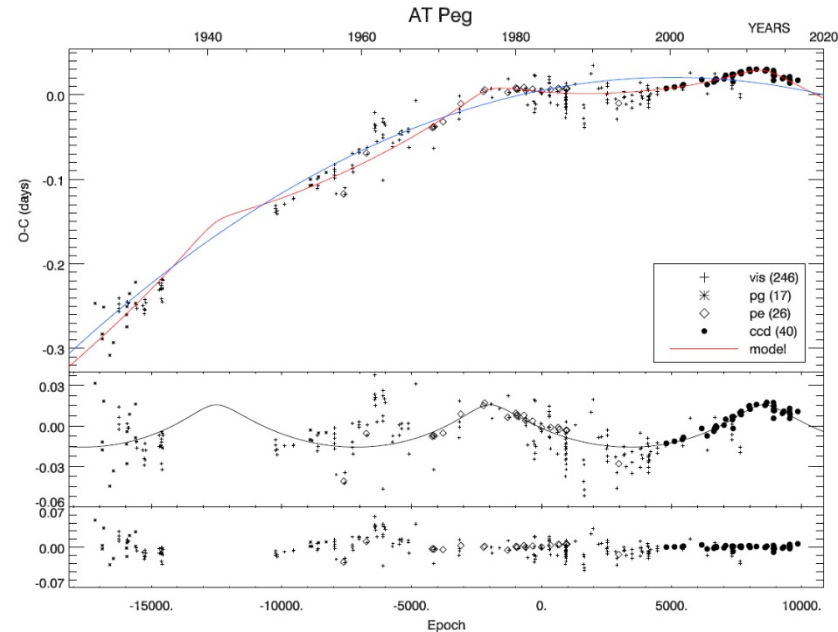
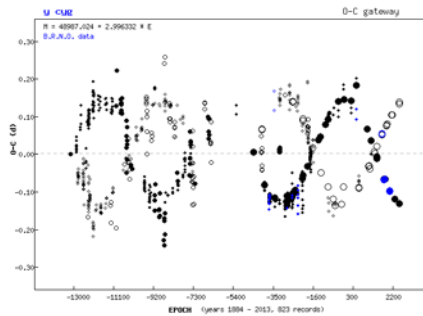
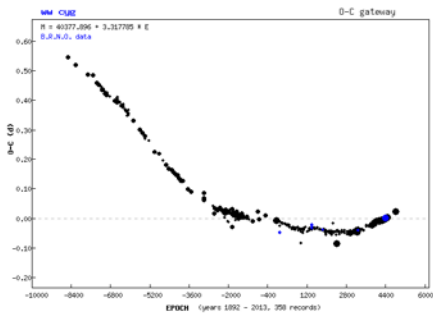
O-C database with analytical tools

O-C databáze s analytickými nástroji



The most common tools for studying eclipsing binaries:

- light/phase curve,
- radial velocity curve,
- O-C diagram (display the development of differences between observed and calculated/predicted timings of minima)



Aim:

- ❖ management of database of minima timings (O-C)
- ❖ tools for calculations of fit of O-C curves, subtracting fits, calculations of new ephemeris, prediction of future behaviour

Can be used for TTVs at exoplanets!

Near contact binaries

Takřka dotykové dvojhvězdy

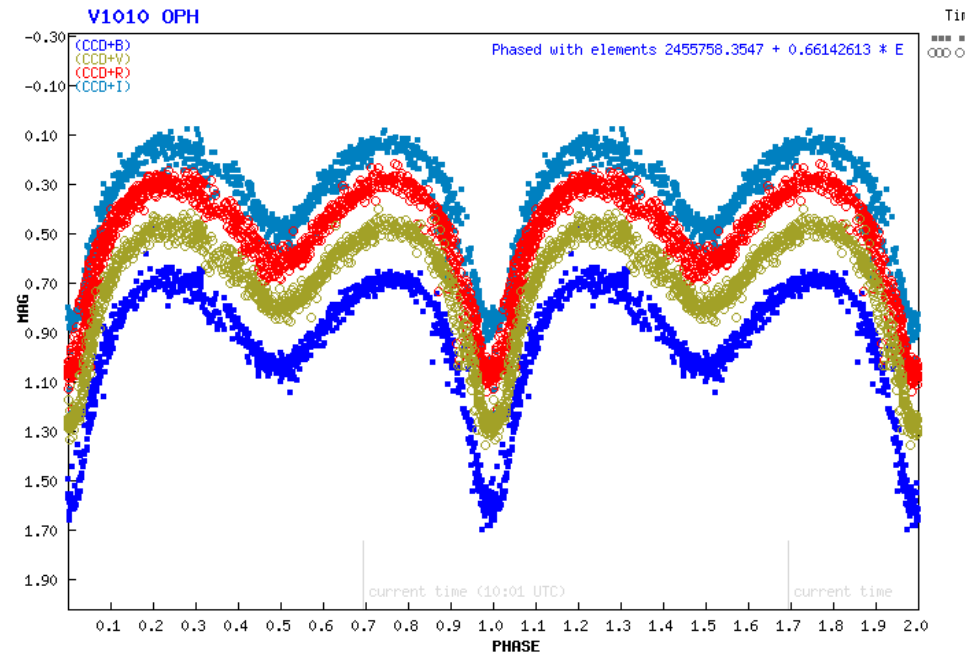
kind of close binaries with both components filling or nearly filling their critical Roche Lobe (Shaw 1990) - two subclasses

Importance:

- NCBs = close binaries in a key evolutionary stage; intermediate objects between the stage of detached and contact systems
- Large temperature difference between the two components while contact in geometry => proof of the TRO
- And others

Aim:

- ❖ Photometric (& spectroscopic) study
- ❖ Determination of parameters, evolutionary status



Determination of distance using W UMa binaries

Určení vzdálenosti pomocí hvězd typu W UMa

Close binaries include more massive early-type systems and less massive late-type systems— commonly known as W UMa (W Ursae Majoris) type binaries

Based on 27 000 W UMas and GAIA DR1 data – the determination accuracy 8 %

Aim:

- ❖ Using GAIA DR3 data select CBs, and W UMas
- ❖ Determinate parameters of (orbital) period-luminosity relations (PLRs)
- ❖ Study of possible changes of PLRs in different parts of our Galaxy (more brighter (longer-period) W UMas are found in younger environments....)

