

# Eclipsing binaries within visual ones

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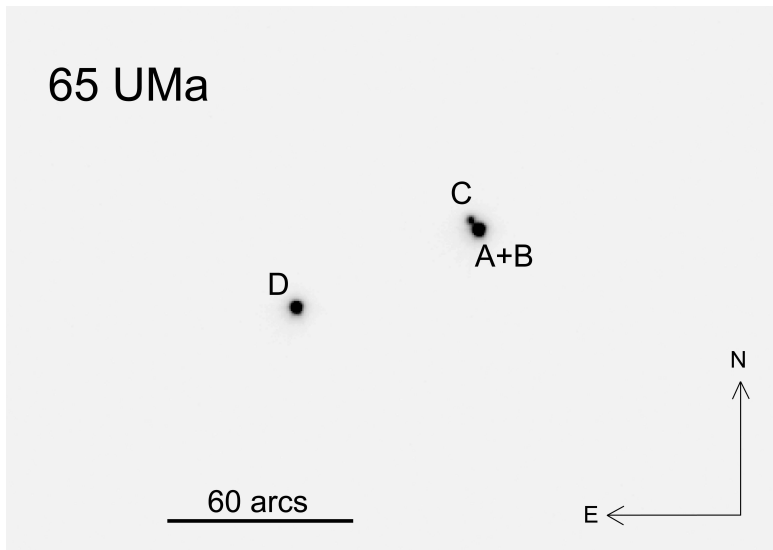
Astronomical institute  
Charles University, Prague  
Czech Republic

From Interacting Binaries to Exoplanets:  
Essential Modeling Tools  
Tatranská Lomnica, Slovakia  
July 18 – 22, 2011

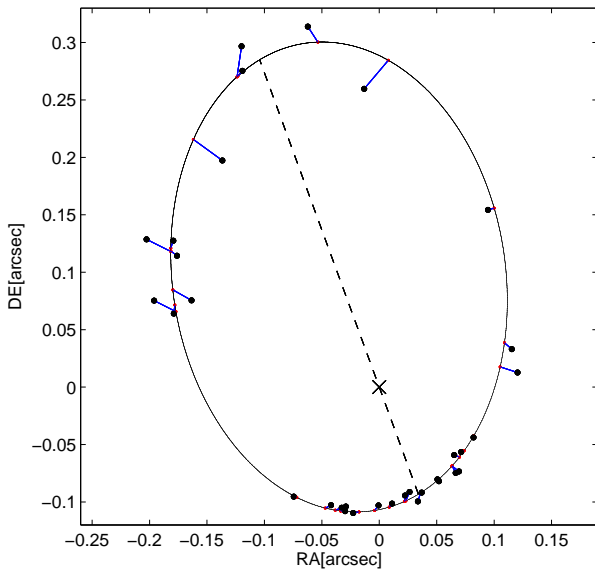
## DN UMa = 65 UMa - Basic info

- Algol-type EB, period 1.73 d, SB2,  $V = 6.5$  mag
- Visual components: A+B, C, D, and interferometric B
- System AB - period about 118 years
- LC, RV, many times of minima
- Mutual inclination of the two orbits:  $i_{2-3} = 47^\circ$
- Spectral types (A3V+A3V) + A8-9 + Ap
- In total 54 spectra from Ondřejov 2-m telescope available

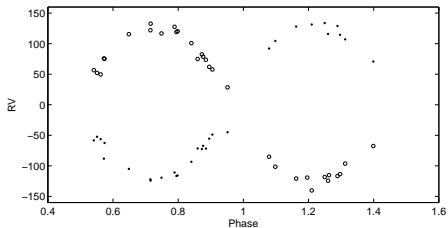
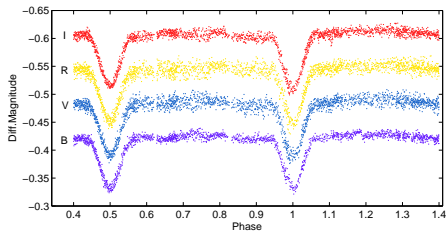
# DN UMa = 65 UMa - The system



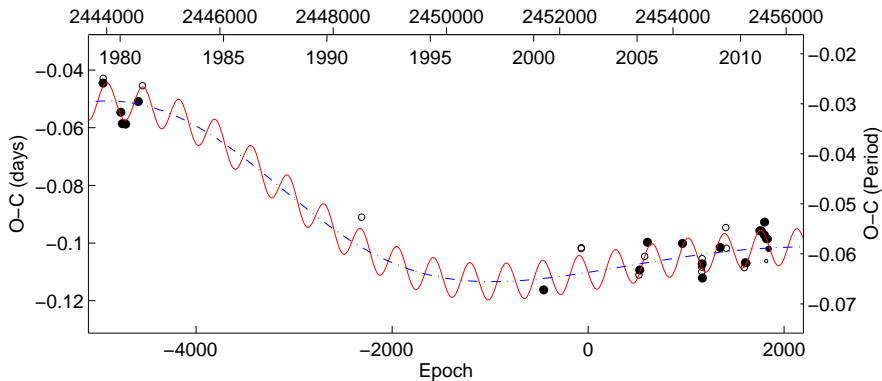
## DN UMa = 65 UMa - Orbit



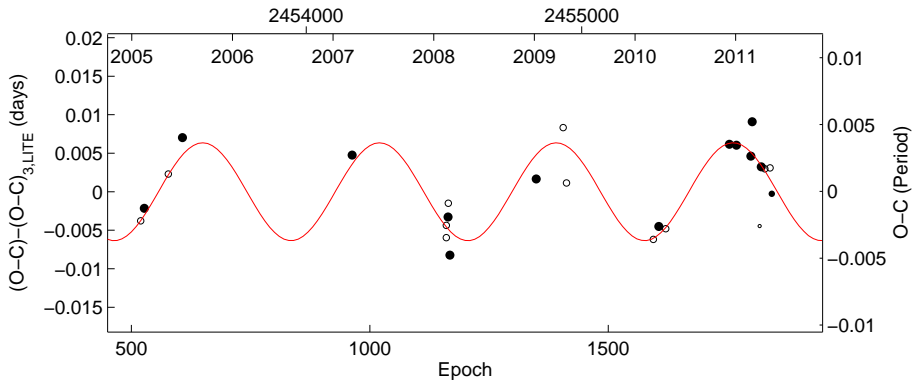
## DN UMa = 65 UMa - LC and RV



## DN UMa = 65 UMa - Period variation



## DN UMa = 65 UMa - New component?



# VV Crv - Basic info

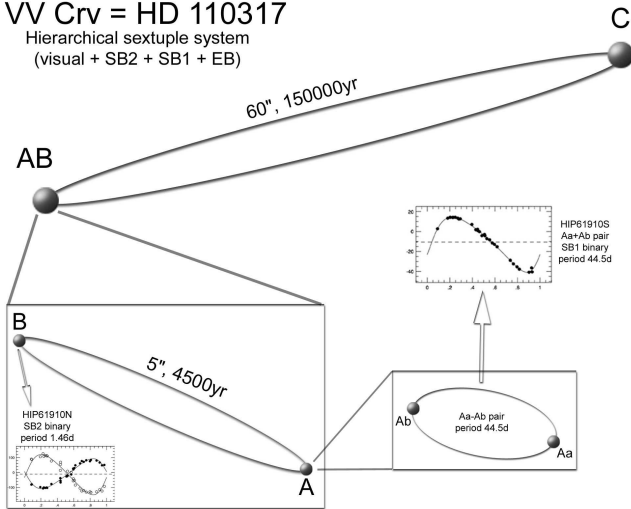
- Algol-type eccentric eclipsing binary,  $V = 5.27$  mag
- Three visible components (A,B,C)
- EB pair period 3.145 day, apsidal motion of several decades
- Spectral types F5V+F5V
- Periods of the SB pairs: 44.508 and 1.46087 day



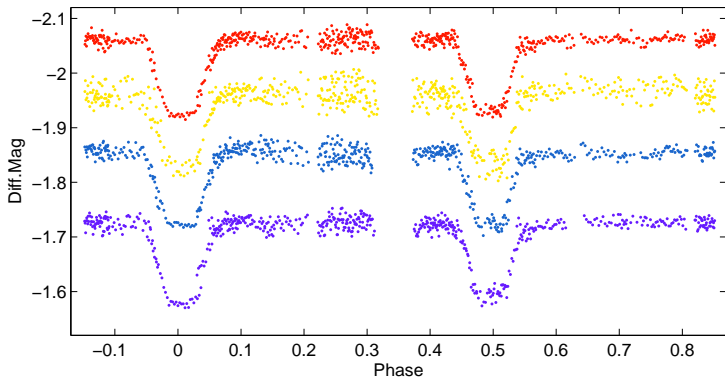
# VV Crv - The system

VV Crv = HD 110317

Hierarchical sextuple system  
(visual + SB2 + SB1 + EB)



## VV Crv - BVRI light curves



- Periods 44.508 and 3.145 days  $\Rightarrow$

Possibility to detect **secular changes** of orbit, **changing the inclination**, and therefore depth of eclipses!

Thank you for your attention!