

Cepheids and the place of AU Peg

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[Goal – Investigation of Cepheids]

- Mapping Atmospheric Motions
Classical and Type II Cepheids

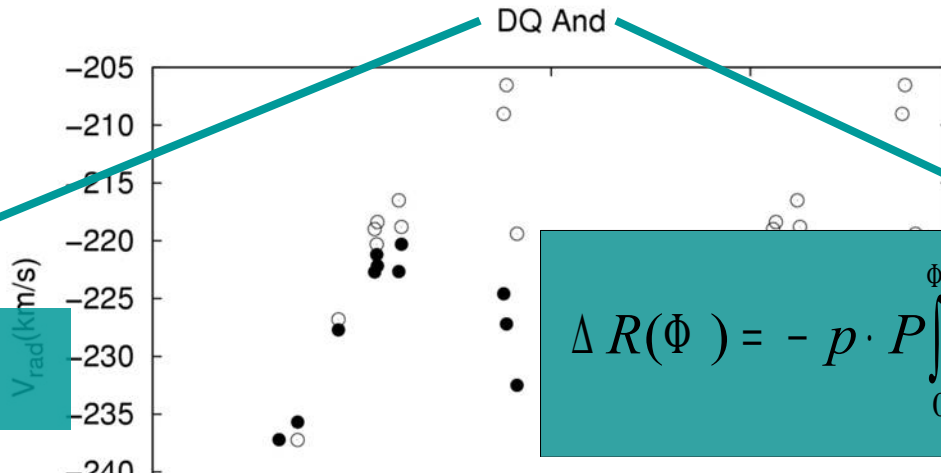
(Jurkovic, Monika; Vinkó, József, 2008, psa, conf, 165J,
Precision Spectroscopy in Astrophysics conference, 2006,
Aveiro)

- Pulsation and Orbit of AU Pegasi

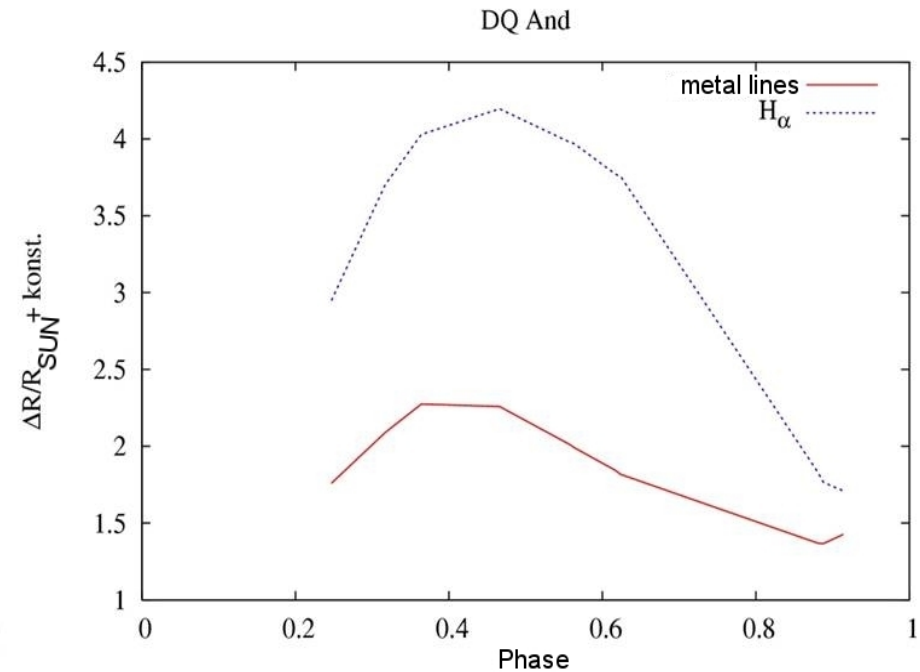
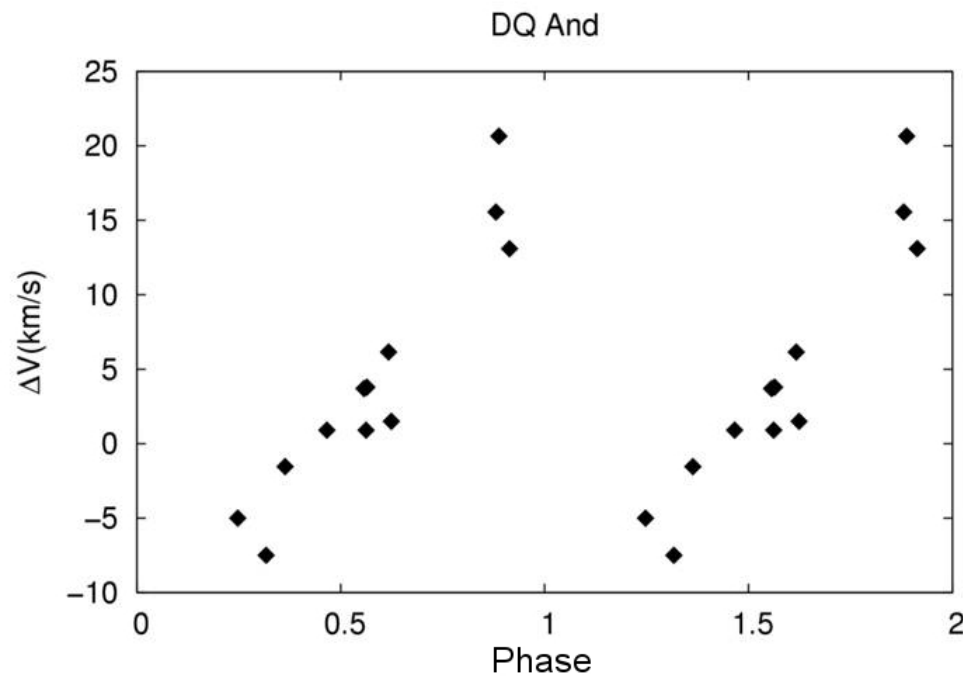
(Jurkovic, M; Szabados, L.; Vinkó, J.; Csák, B., 2007, AN,
328, 837J)

The motion of layers

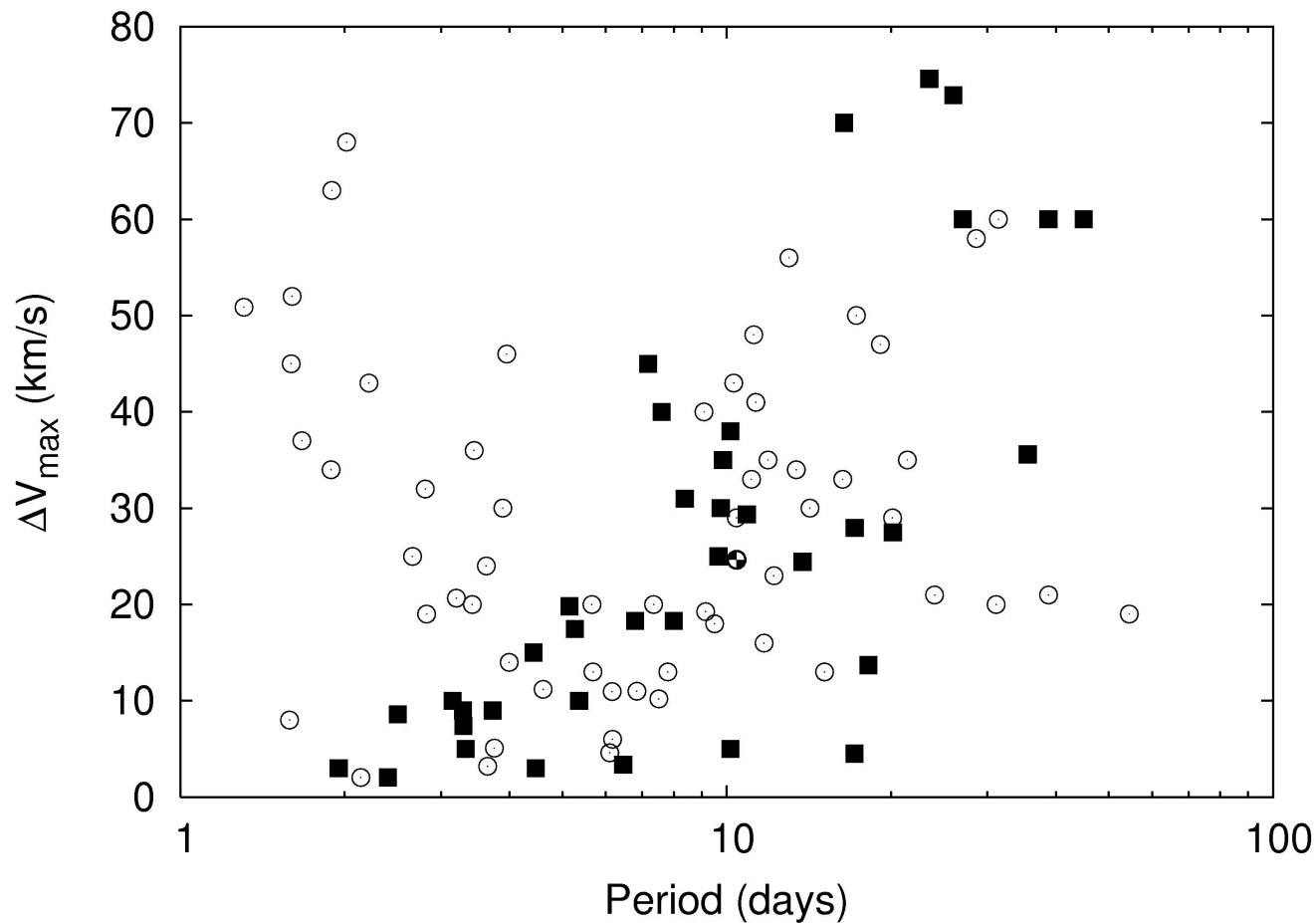
$$\Delta v = v_{\text{H}\alpha} - v_{\text{metal}}$$



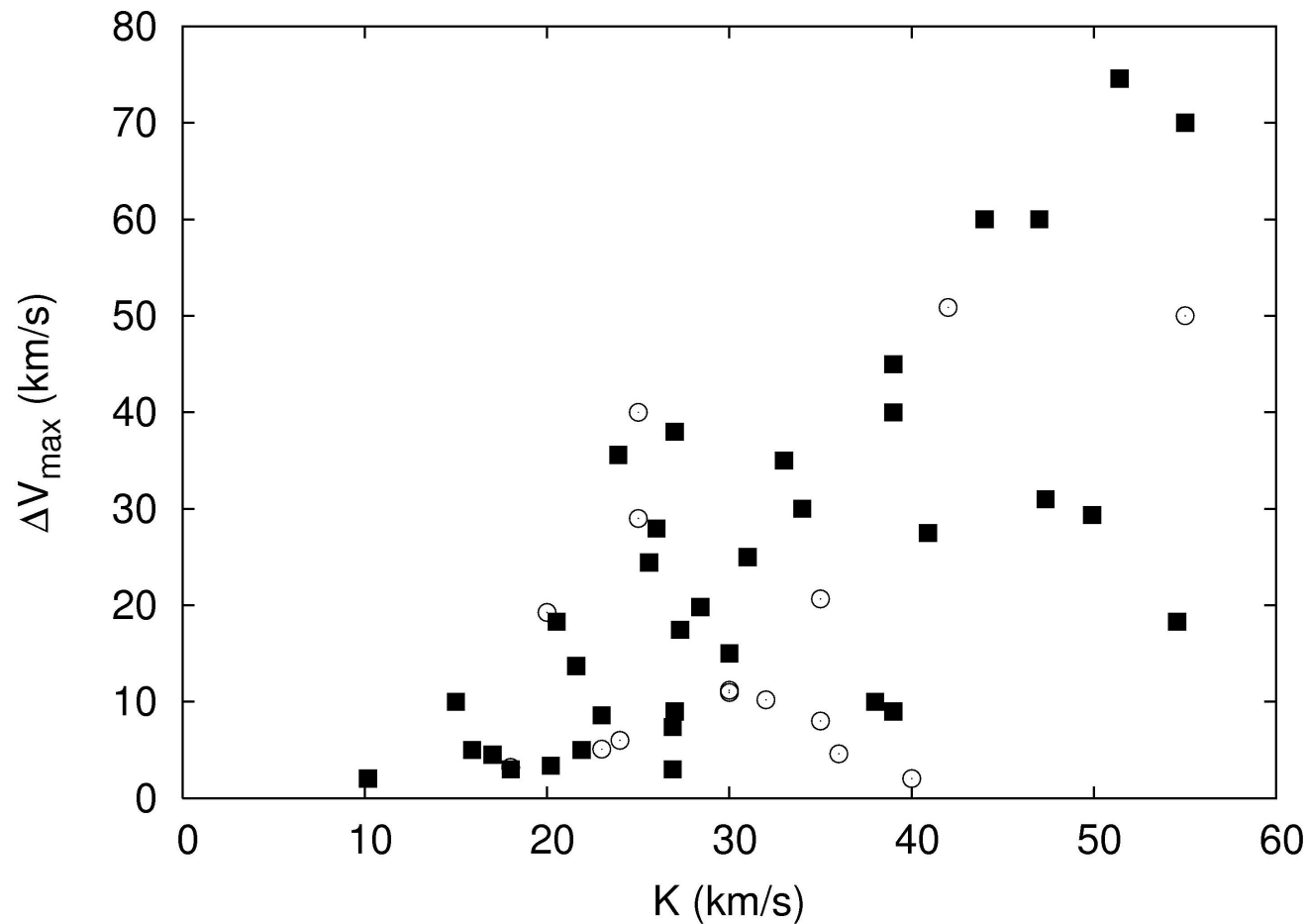
$$\Delta R(\Phi) = -p \cdot P \int_0^\Phi (v_r(\Phi') - v_l) d(\Phi')$$



Mapping atmospheric motions in Classical and Type II Cepheids - Results

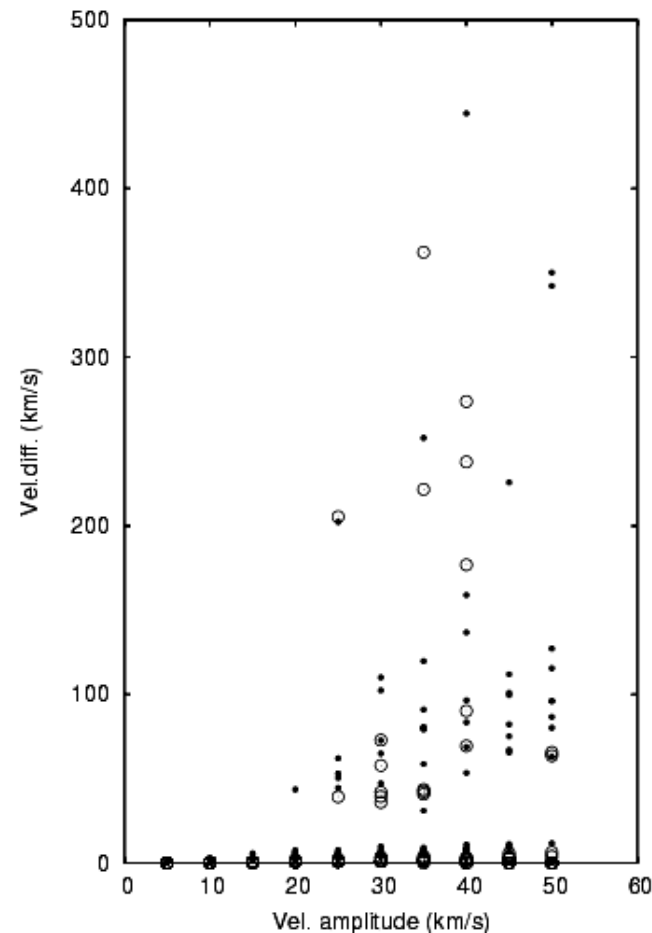
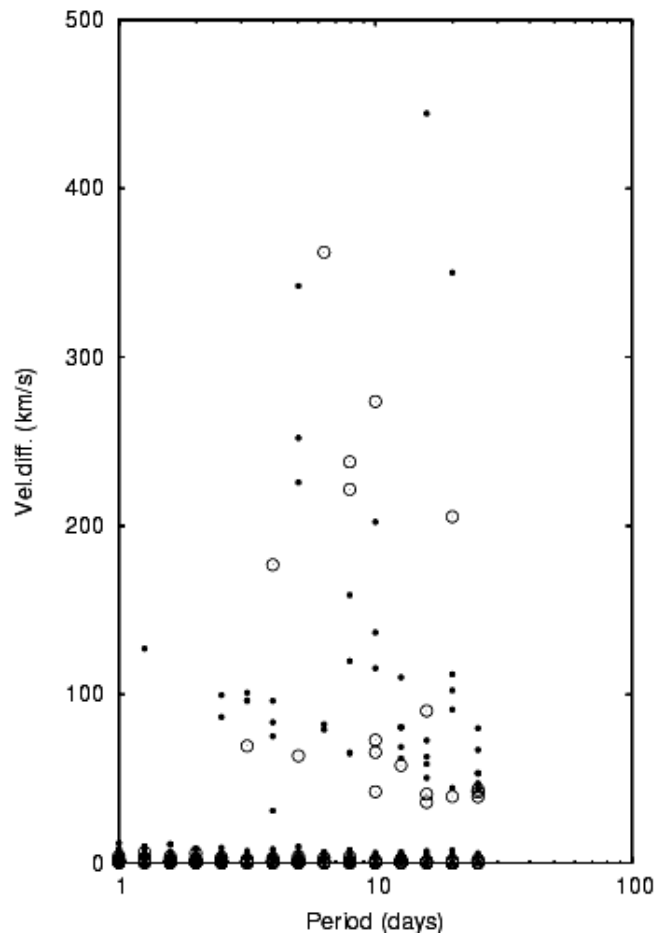


Mapping atmospheric motions in Classical and Type II Cepheids - Results



Mapping atmospheric motions in Classical and Type II Cepheids - Results

SIMPLE MODEL FOR TYPE II CEPHEIDS

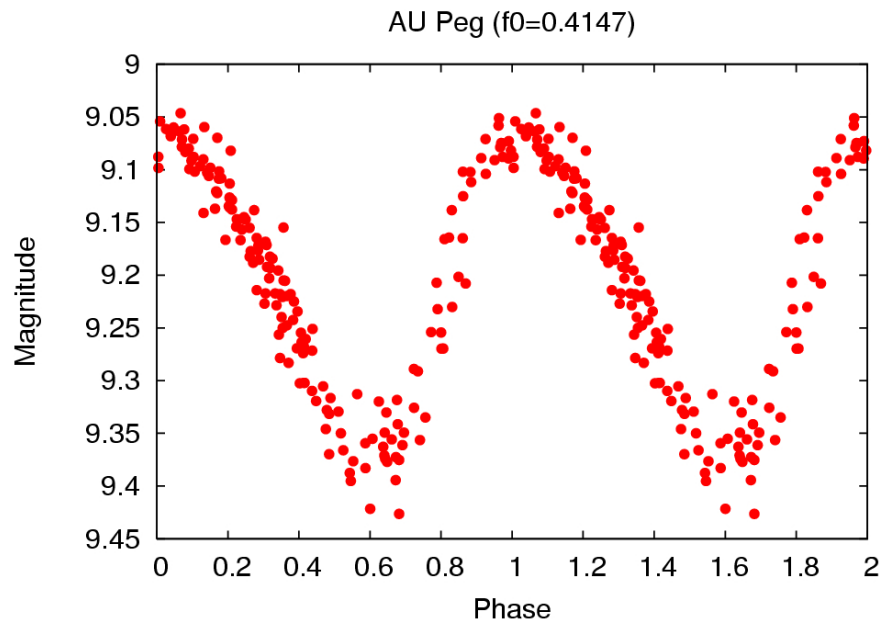


10th June, 2008

VLTI School, Keszthely



Pulsation and orbit



PHOTOMETRY

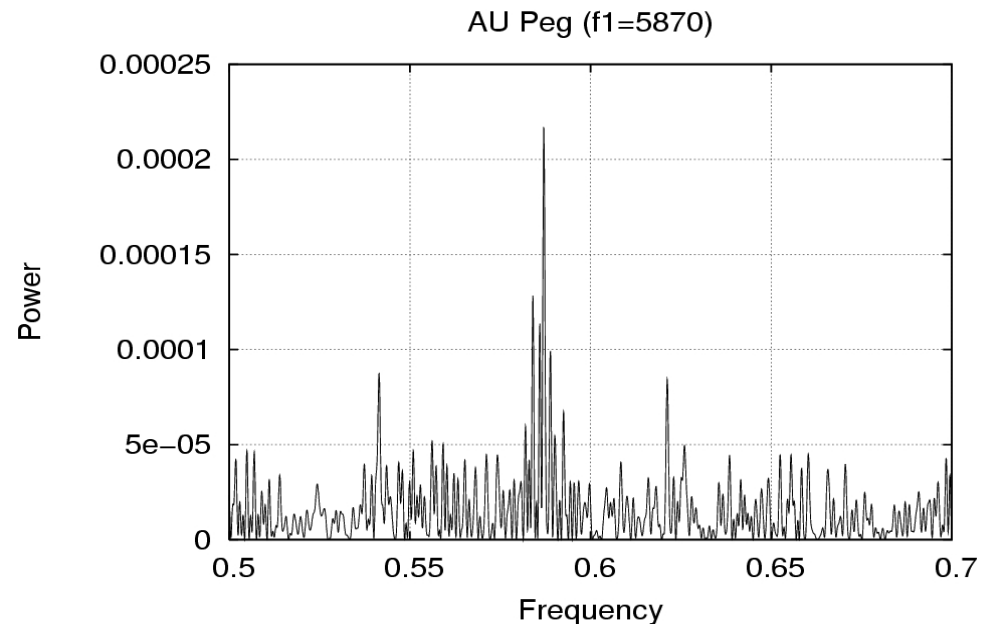
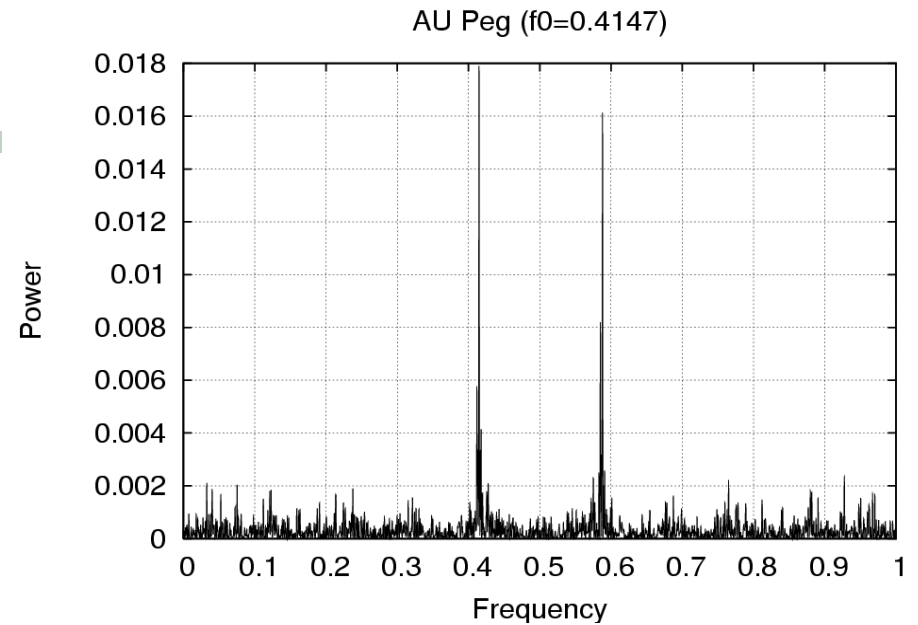
$$f_0=0.4147$$

$$f_1=0.5870$$

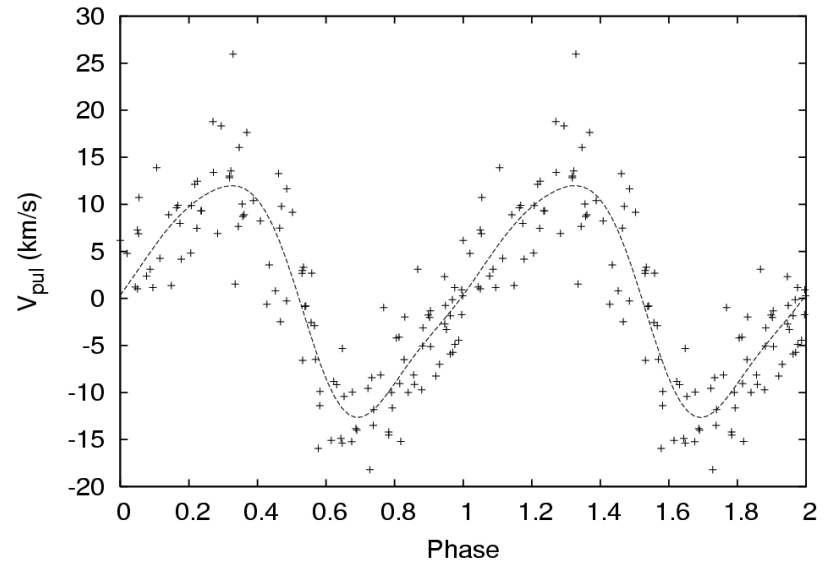
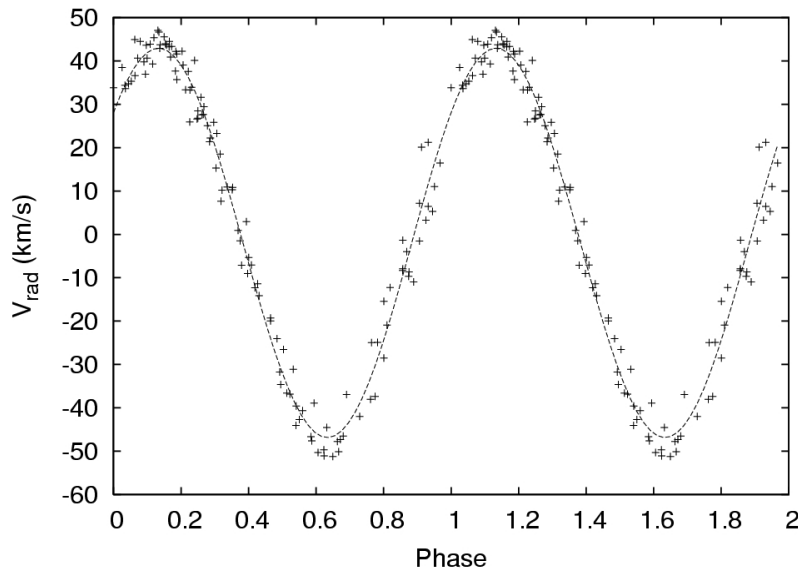
$$f_0/f_1=0.7065$$

10th June, 2008

VL1



Pulsation and orbit of AU Pegasi-Results



SPECTROSCOPY

$$P_{\text{orb}} = 53.26 \text{ days}$$

$$T_0 = 2447739.496$$

$$\phi = -41.68 \pm 0.01$$

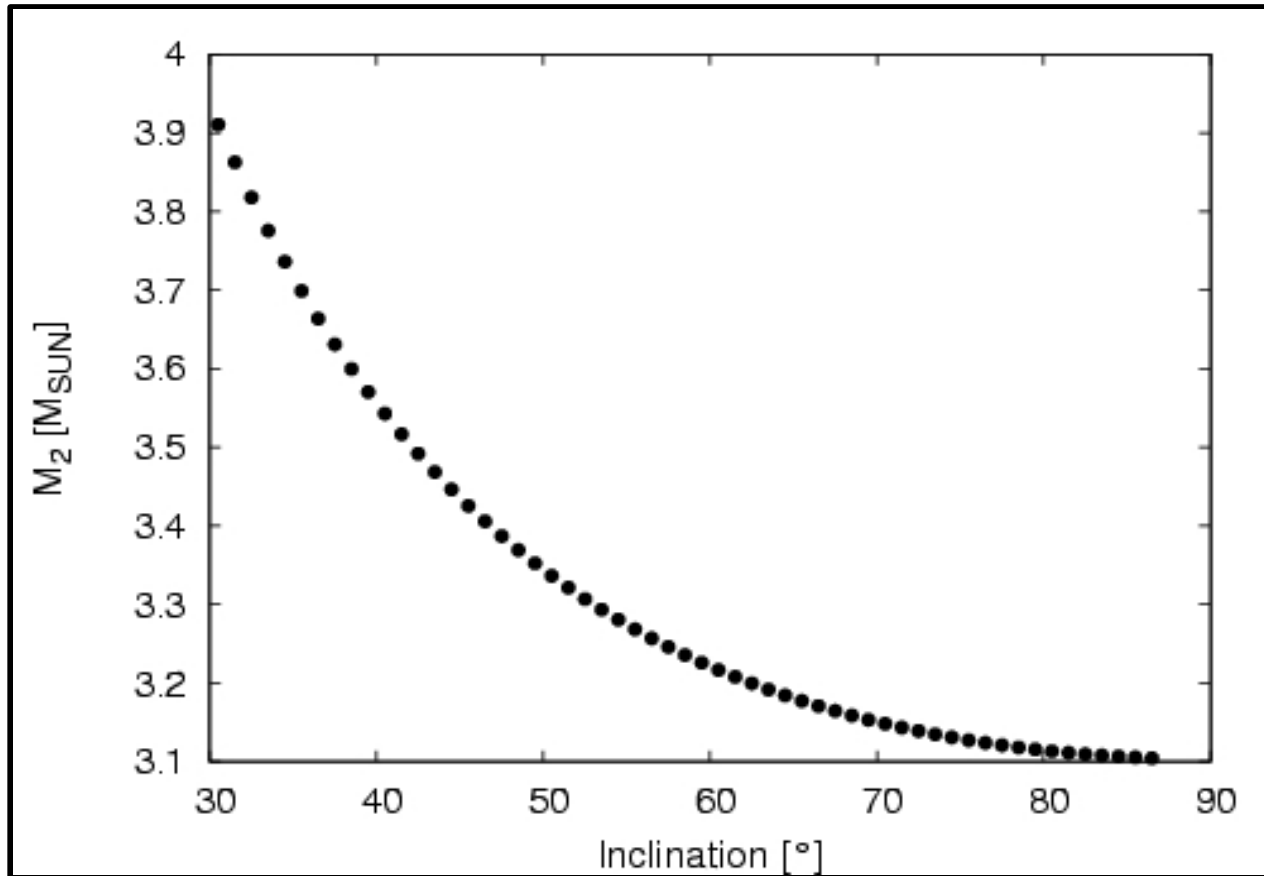
$$V_0 = -1.96 \pm 0.42 \text{ kms}^{-1}$$

$$K = -44.86 \pm 0.57 \text{ kms}^{-1}$$

$$a_1 \sin i = 0.21 \text{ AU}$$

$$f(m_2) = 0.49 M_{\odot}$$

Pulsation and orbit of AU Pegasi-Results



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