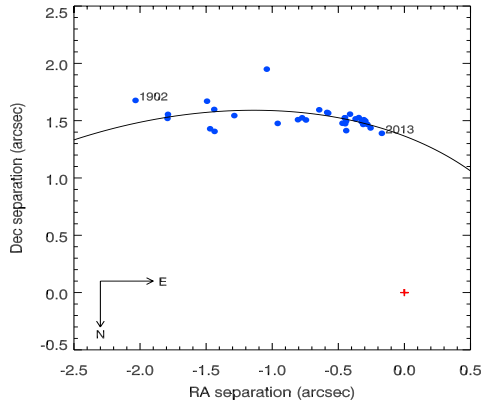


KEPLER OBSERVATION OF HD 176465, A BINARY SYSTEM WITH OVERLAPPING PULSATION FREQUENCIES

BENOMAR O., WHITE T.R., SILVA AGUIRRE V., BALL W. H. + WORKING GROUP 1

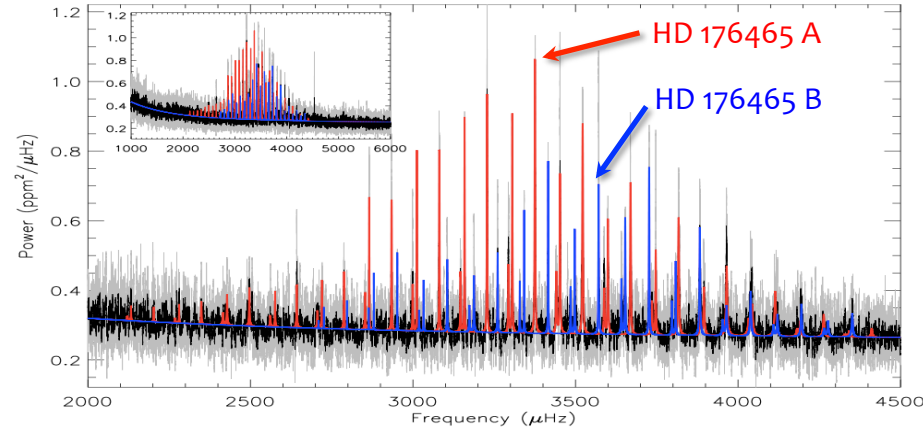
PB S12.74



~1000-year orbit

Bright stars: ~8.5 V_{mag}

Both pulsating



HD 176465 A

Property	AMP	ASTFIT	BASTA	MESA
Mass (M_{\odot})	0.930 ± 0.041	0.952 ± 0.015	$0.960^{+0.010}_{-0.011}$	0.95 ± 0.04
Radius (R_{\odot})	0.918 ± 0.015	0.927 ± 0.005	$0.928^{+0.006}_{-0.003}$	0.925 ± 0.014
Age (Gyr)	3.0 ± 0.4	3.2 ± 0.5	2.8 ± 0.3	3.2 ± 0.2
Z_i	0.0085 ± 0.0010	0.0103 ± 0.0010	0.011 ± 0.004	0.0102 ± 0.0011
Y_i	0.258 ± 0.024	0.262 ± 0.003	0.265 ± 0.002	0.25 ± 0.03
α	1.90 ± 0.18	1.80	1.791	1.57 ± 0.11

HD 176465 B

Property	AMP	ASTFIT	BASTA	MESA
Mass (M_{\odot})	0.930 ± 0.024	0.918 ± 0.021	$0.920^{+0.010}_{-0.011}$	1.02 ± 0.06
Radius (R_{\odot})	0.885 ± 0.006	0.883 ± 0.007	$0.886^{+0.003}_{-0.006}$	0.917 ± 0.019
Age (Gyr)	2.9 ± 0.5	3.4 ± 0.9	3.2 ± 0.4	3.0 ± 0.3
Z_i	0.0085 ± 0.0007	0.0096 ± 0.0011	0.011 ± 0.004	0.0124 ± 0.0013
Y_i	0.246 ± 0.013	0.262 ± 0.003	0.265 ± 0.002	0.21 ± 0.04
α	1.94 ± 0.12	1.80	1.791	2.03 ± 0.21

Same age:
 3.0 ± 0.5 Gyrs
 → Born together

Same Inclination:
 ~50 deg

Same rotation:
 ~18 days

