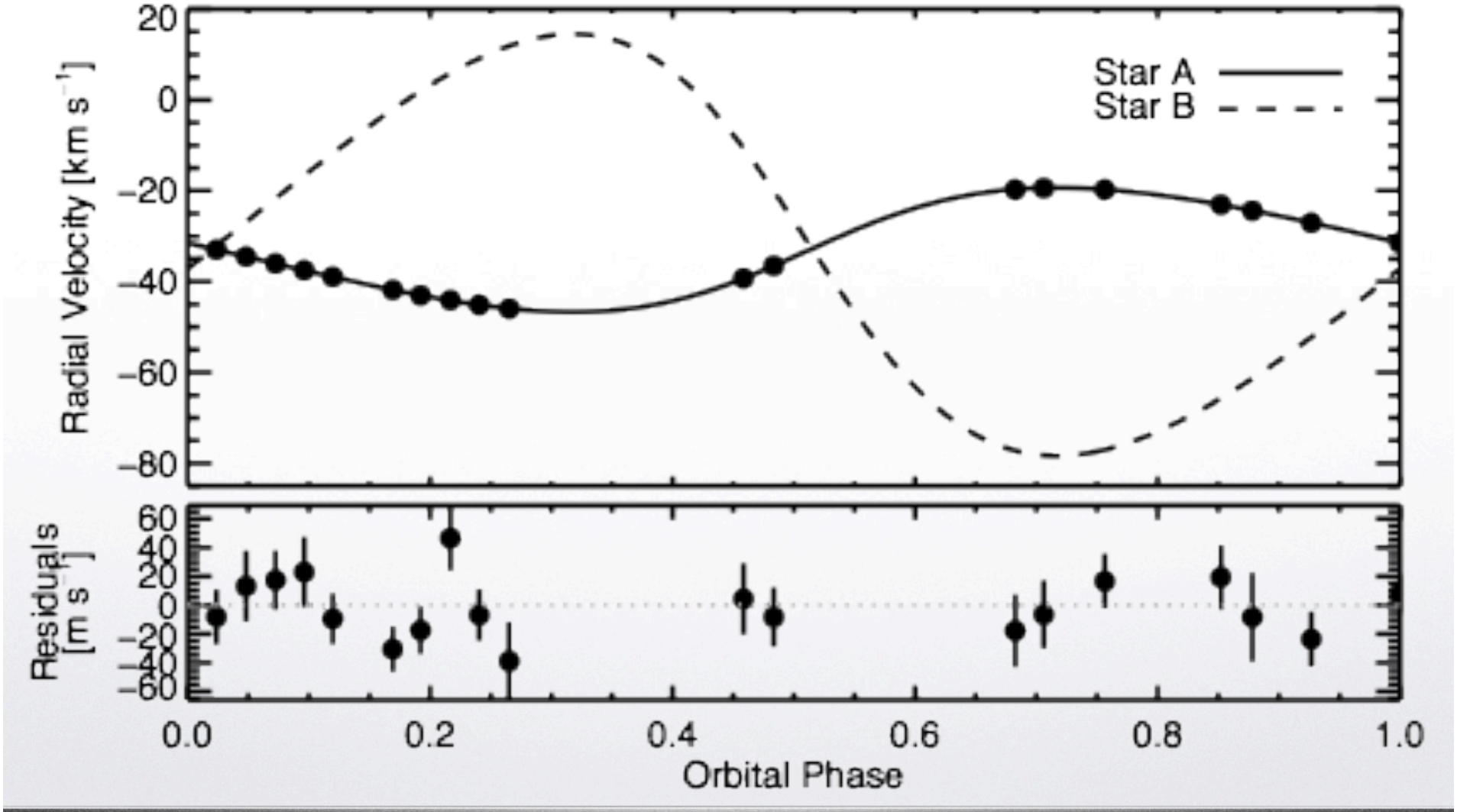
Kepler-16: The Mass of b



Kepler-16: Accurate Masses and Radii

Parameter	Value and Uncertainty
Star A	
0.50% Mass, M_A ($M_\odot$)	$0.6897^{+0.0035}_{-0.0034}$
0.20% Radius, R_A ($R_\odot$)	$0.6489^{+0.0013}_{-0.0013}$
Mean Density, ρ_A (g cm^{-3})	$3.563^{+0.017}_{-0.016}$
Surface Gravity, $\log g_A$ (cgs)	$4.6527^{+0.0017}_{-0.0016}$
Effective Temperature, $T_{\rm eff}$ (K)	4450 ± 150
Metallicity, [m/H]	-0.3 ± 0.2
Star B	
0.33% Mass, M_B ($M_\odot$)	$0.20255^{+0.00066}_{-0.00065}$
0.26% Radius, R_B ($R_\odot$)	$0.22623^{+0.00059}_{-0.00053}$
Mean Density, ρ_B (g cm^{-3})	$24.69^{+0.13}_{-0.15}$
Surface Gravity, $\log g_B$ (cgs)	$5.0358^{+0.0014}_{-0.0017}$
Planet b	
4.8% Mass, M_b ($M_{\rm Jupiter}$)	$0.333^{+0.016}_{-0.016}$
0.34% Radius, R_b ($R_{\rm Jupiter}$)	$0.7538^{+0.0026}_{-0.0023}$
Mean Density, ρ_b (g cm^{-3})	$0.964^{+0.047}_{-0.046}$
Surface Gravity, g_b (m s^{-2})	$14.52^{+0.70}_{-0.69}$