NEW LIGHT ON UU SAGITTAE

S.A. BELL and D.L. POLLACCO
Department of Physics and Astronomy, North Haugh, St. Andrews, Fife KY16 9SS, Scotland

New V and I band CCD photometry and medium resolution spectroscopy are used to derive the masses, luminosities and radii accurate to < 10% for the individual components of the eclipsing central star of the planetary nebula A63–UU Sge ($M_1 = 0.63 \pm 0.06 M_\odot$, $R_1 = 0.33 \pm 0.01 R_\odot$, $M_2 = 0.29 \pm 0.04 M_\odot$ and $R_2 = 0.53 \pm 0.02 R_\odot$). Emission lines from the secondary component and HeII and NV absorption features from the primary component are used to determine the first radial velocity curves of the system. Ultra–violet and optical spectra show that the temperature of the primary compoment is $\sim 10^5$K – much larger than previously suspected. As the techniques used are essentially independent this is probably the most accurately known mass for a planetary nebula central star and therefore allows meaningful comparison to be made with evolutionary tracks for these objects.

https://doi.org/10.1017/S0074180900171840 Published online by Cambridge University Press