abstract HS0907+1902 was recently discovered to be one of a handful of deeply eclipsing dwarf novae with periods longward of the 2–3 hr ‘gap’. This paper presents orbit-resolved spectra and time series photometry of an eclipse. The apparent velocity amplitude of the M-dwarf secondary is $K_2 = 297 \pm 15 \text{ km s}^{-1}$. The phase of the radial velocities of the H$\alpha$ emission line wings agrees accurately (for once) with the phase of the white-dwarf motion deduced from the eclipse, and an estimate of the emission-line velocity amplitude yields $K_1 = 115 \pm 7 \text{ km s}^{-1}$. The eclipse width is $\Delta \phi = 0.060 \pm 0.005$. At face value, these measurements yield mass estimates of $M_1 = 0.99 \pm 0.12 \, M_\odot$ for the white dwarf and $M_2 = 0.53 \pm 0.08 \, M_\odot$ for the secondary. The eclipse width and nominal mass ratio constrain the binary inclination $i$ to be $77.3 \pm 0.9$. The influence of systematic uncertainties on these values is discussed; the conclusion that the white dwarf is somewhat more massive than typical field white dwarfs appears to be robust.

The H$\alpha$ emission line profile out of eclipse is only slightly double-peaked, but the line shows a strong rotational disturbance in eclipse. Models of the line profile through eclipse using a flat, Keplerian disk do not give a good quantitative match to the observations.
Spectrum Decomposition

(upper) HS0907+1902

(middle) difference

(lower) Gliese 436 (M3) scaled

Flux [$10^{-16}$ erg cm$^{-2}$ s$^{-1}$ Å$^{-1}$]

Wavelength [Å]