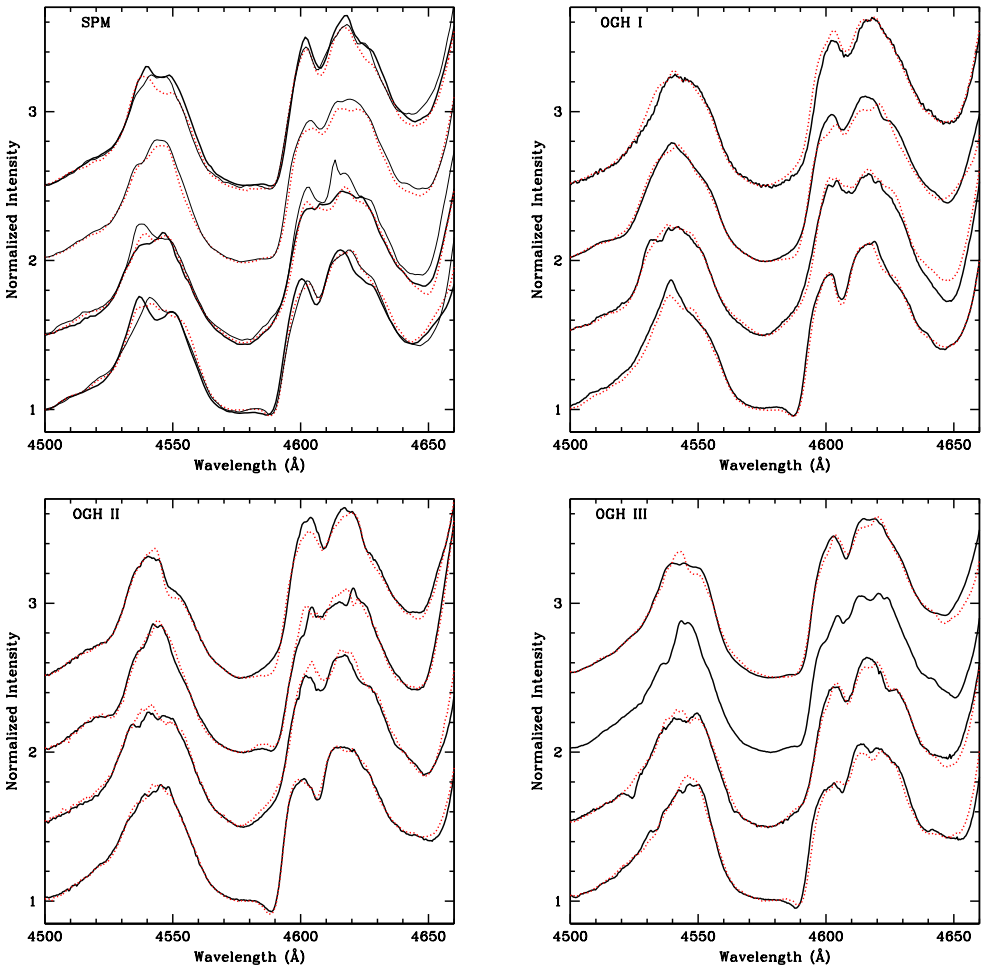

Fig. 3. Data from SPM (top left), OGH I (top right), OGH II (bottom left) and OGH III (bottom right) as in Figure 1 but here the spectra lying lowest in each plot are those in which N V 4604 has a *strong* P Cygni absorption component. Subsequent spectra stacked vertically correspond to the following nights of observation. Spectra of similar phases from contiguous cycles are superposed using different line types: the first cycle is plotted with thick lines, the second cycle with dots and the third cycle with thin lines. The *strong*-type profiles are always followed on the next night by an *absent*-type profile. The color figure can be viewed online.

of the spectra, and, for example, the changes seen in the OGH II spectra at phases 0.91 and 0.97 at 4585–4610 Å region lie in the range ∼5–8%. Given that S/N $\sim 110n^{1/2}$ in these spectra and that each of the spectra is the average of $n > 5$ individual exposures, most of these changes are well above what would be expected from random fluctuations.

4. LINE FITTING PROCEDURE

The periodic line profile variations can be interpreted within three general scenarios. The first is one in which the intrinsic wind structure of the WR star changes over the 3.76 d period; in the second scenario, it is anisotropic, for example, having quadrants with different velocity gradients or ionization fractions. In the third scenario, the inner portions of the wind have a stationary structure, but the outer regions do not, either because of some intrinsic instability or because of the perturbation from a companion. In this paper we focus on the first interpretation because it is the one that requires the smallest number of assumptions.

The line-profiles were modeled using the radiation transfer code described by Auer & Koenigsberger (1994). This is a simple code which computes the line profile produced in a wind having either a linear or a β-velocity law and an opacity distribution with arbitrary characteristics. The algorithm assumes spherical symmetry and uses the