Resonant two-photon ionization spectroscopy has been used to study the diatomic molecule WC. A low resolution scan revealed a five member vibrational progression beginning at 17 585 cm$^{-1}$ with the $\nu_0$ transition. Analysis of this progression yielded a vibrational frequency of $\omega'_{\nu}(^{184}\text{W}^{12}\text{C}) = 752.6(4.9)$ cm$^{-1}$ and a bond length of $r'_{\nu}(^{184}\text{W}^{12}\text{C}) = 1.747(4)$ Å. In addition, several unassigned bands were rotationally resolved. Interestingly, all of the observed excited states have $\Omega' = 2$. All of the rotationally resolved transitions were fit simultaneously to produce the best possible fit of the ground state. Assignment of these bands confirmed a ground state of $^3\Delta_1$ from a $14\sigma^28\pi^415\sigma^24\delta^116\pi^1$ configuration and determined the ground state as $r_0^{\sigma}(^{184}\text{W}^{12}\text{C}) = 1.7143(2)$ Å. Dispersed fluorescence studies to elucidate the ground and low-lying excited states will also be reported. These results on WC are compared to the results of studies on MoC and other transition metal carbides.