OPTICAL ZEEMAN SPECTROSCOPY OF THE (0,0) $B^3\Pi - X^3\Delta$ and (0,0) $A^3\Phi - X^3\Delta$ BAND SYSTEMS OF TITANIUM MONOXIDE, TiO

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The Zeeman effect in the (0,0) $B^3\Pi - X^3\Delta$ (γ'band) and (0,0) $A^3\Phi - X^3\Delta$ (γ band) optical systems of titanium monoxide, TiO, have been recorded and analyzed. Magnetic tuning of the low-rotational spectral features recorded at high resolution (full width at half maximum of 35 MHz) and at field strengths up to 1.2 kG, is accurately modeled using an effective Zeeman Hamiltonian. A comparison is made with the previous predictions, which were based upon field free spectroscopic parameters. [a] An interpretation of the determined g_L parameter for the $B^3\Pi(g_L = \pm 1.043(9))$ and $A^3\Phi(g_L = \pm 0.991(4))$ states will be presented.

[a] S. V. Berdyugina and S. K. Solanki *Ast. and Astro.* **385**(2), 701-715 2002.