

## SPECTROSCOPY OF TiO SINGLET STATES

DROR M. BITTNER, PETER F. BERNATH, *Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, VA, USA.*

TiO is a molecule of considerable astronomical importance. It is present in the atmospheres of oxygen-rich low-mass stellar objects. Three Fourier transform emission spectra have been used to determine improved and consistent spectroscopic constants of the  $a^1\Delta$ ,  $b^1\Pi$ ,  $d^1\Sigma^+$ ,  $c^1\Phi$  and  $f^1\Delta$  states of TiO by fitting the  $b^1\Pi$ - $a^1\Delta$ ,  $b^1\Pi$ - $d^1\Sigma^+$ ,  $c^1\Phi$ - $a^1\Delta$  and  $f^1\Delta$ - $a^1\Delta$  systems. This analysis provides the most extensive fit of the TiO singlet states. New bands of the  $b^1\Pi$ - $a^1\Delta$  and  $c^1\Phi$ - $a^1\Delta$  systems have been measured and an extensive list of line positions will be published.