

**Coupling Of Large-Scale Atmospheric Waves In Stratospheric/Mesospheric  
Temperature At Middle And High Latitudes: Cosmic Gps Vs. Mls-Aura  
Observations**

*M. G. Shepherd*

*York University, Toronto, Canada*

*S. P. Alexander*

*Australian Antarctic Division, Kingston, Australia*

The global structure and propagation of large-scale (periods  $> 5$  days) waves at middle and high latitudes ( $45^{\circ}$ - $75^{\circ}$ ) in the Northern and Southern hemispheres are examined using temperature data in the altitude range from 10 km to 90 km (from the upper troposphere to the upper mesosphere). The data are obtained from GPS radio occultation measurements by the COSMIC satellite constellation and the MLS-Aura satellite. Spectral analysis has revealed strong quasi-stationary and eastward propagating planetary wave perturbations with periods of 11-, 16- and 23 days at high latitudes. The source of these perturbations is investigated employing UKMO temperature and wind assimilated fields. The inter-hemispheric coupling of these waves is also investigated and discussed.