

# **Dynamical variability of OI 630.0nm dayglow emissions over low geomagnetic latitudes**

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Measurement of neutral oxygen emissions that emanate from the thermosphere is a powerful means of investigating the dynamical variations in the ionosphere thermosphere (IT) system. We present the daytime variations in the IT system as obtained using HIRISE measurements of thermospheric neutral OI 630.0nm dayglow emissions. HIRISE (High Resolution Imaging Spectrograph using Echelle grating) is a high spectral resolution instrument built at Boston University and is an established tool to measure daytime emissions in the presence of strong solar scattered background continuum. We will present results on the OI 630.0nm dayglow variability obtained from Carmen Alto, (23.16° S, 70.66° W; 10.6° S magnetic latitude), Chile, which is a low-latitude location. We will show that the variation in this emission show signatures of neutral and electrodynamic behavior of the IT system. We will also show that it was possible to estimate compositional variations over Carmen Alto during a severe geomagnetic storm of November 06, 2001. Finally, we will discuss further advancements to this technique that are currently being planned.