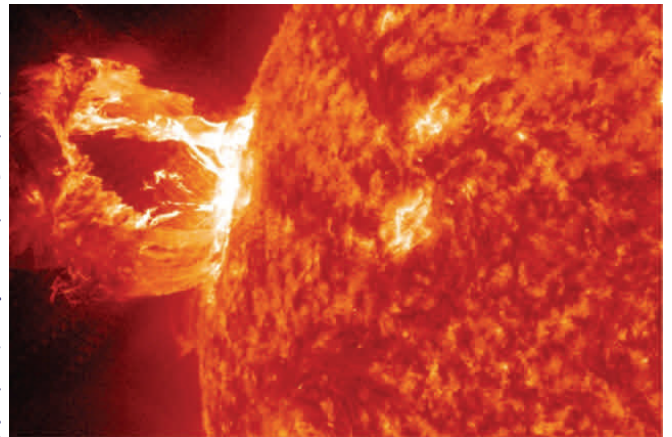


Physics & Space Sciences department presents:

Some Characteristics of the Ionospheric Behavior During Solar Cycles 22-23 and 23-24 Minima

Solar cycle minimum 23/24 has been considered unusually deep and complex. In this presentation we study the ionospheric behavior during this minimum, and show some comparisons against the previous minimum. We have found that although close to the geophysical variability, the ionosphere response during the latest minimum is observable, and significant and consistent enough to consider that it does escape outside the range of normal geophysical variability of the system. Two main ionospheric parameters have been studied, vertical TEC



(vTEC, total electron content) and NmF2 (peak concentration of the F region). While vTEC showed a consistent modest decrease of the mean value, NmF2 behavior was less clear, with instances where the mean value for minimum 23/24 was even higher than for minimum 22/23. A similar complex behavior is also shown by the height of the peak concentration (NmF2). This mixed behavior of the ionospheric parameters could indicate the depletion of the total ionospheric plasma content through less EUV ionization (Solomon et al., 2010), while the ionization at the F-region peak, NmF2, more complex, may be explained by the movement of the plasma caused by electric fields or neutral-wind interactions, which could suggest that less plasma was created during the 23-24 minimum, but that the peak density was more sensitive to global neutral dynamics, as well as



Eduardo A. Araujo-Pradere
CIRES-Univ. of Colorado

Friday, April 19, 2013

4:00—5:00 PM

OPS Room 140