

**INCOHERENT SCATTER DETECTION OF DOWNWARD PROTON FLUXES INTO THE  
IONOSPHERIC F-REGION OVER ARECIBO DURING JULY 1986 SOLAR MINIMUM**

by

**J.H.A. Sobral<sup>1</sup>, R.G. Burnside<sup>2</sup>, S. Gonzalez<sup>3</sup>, C.J. Zamlutti<sup>1</sup>,  
E. de Paula<sup>1</sup>, M.A. Abdu<sup>1</sup>, Y. Sahai<sup>1</sup> and H. Takahashi<sup>1</sup>**

<sup>1</sup>INPE, São José dos Campos, SP, Brazil,

<sup>2</sup>National Astronomy and Ionosphere Center (NAIC),  
Arecibo, Puerto Rico, USA,

<sup>3</sup>Utah State University CASS,  
Logan, Utah, USA

**ABSTRACT**

Five nights of incoherent scatter measurements performed at the Arecibo Observatory in July 1986 present large downward fluxes of hydrogen ions into the ionospheric F-region and large hydrogen ion concentrations in the ionospheric F-region, the latter feature being markedly high in the bottomside F-region. Those data are here introduced and analysed in the light of the local ionosphere dynamics and low solar activity (solar minimum) condition.