

INTERPLANETARY MAGNETIC PHENOMENA AND PROCESSES AND THE
RESULTANT CONTROL OF GEOMAGNETIC ACTIVITY AT EARTH

by

Bruce T. Tsurutani¹, Walter D. Gonzalez², Frances Tang³,
Syun I. Akasofu⁴, Edward J. Smith¹,
Armando L. Brinca^{1,5}, Bruce E. Goldstein¹,
Roger R. Anderson⁶ and Timothy E. Eastman⁷

¹Jet Propulsion Laboratory, California Institute of Technology
Pasadena, CA

²INPE, São José dos Campos, SP, Brazil

³California Institute of Technology, Pasadena, CA

⁴Geophysical Institute, Fairbanks, AK

⁵Instituto Superior Técnico, Lisboa, Portugal

⁶University of Iowa, Iowa City, IA

⁷NASA Headquarters, Washington, D.C.

ABSTRACT

We present a summary of recent work and work-in-progress by the authors, to give an overview of the interplanetary features which cause various forms of geomagnetic activity: the very largest magnetic storms, major ($Dst \leq -100nT$) magnetic storms, substorms, geomagnetic quiet and the quiet dayside aurora. The causes of solar cycle and seasonal variations in geomagnetic activity will also be discussed.