

Geophysical Research Abstracts,
Vol. 10, EGU2008-A-04357, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-04357
EGU General Assembly 2008
© Author(s) 2008



Solar wind prediction at Saturn

B. Zieger and K. C. Hansen

University of Michigan, USA (bzieger@umich.edu)

Solar wind predictions in the foreshock region of the giant planets received renewed interest in the past few years in connection with the Galileo and Cassini missions. Our 1.5-D numerical MHD model of solar wind propagation has been successfully employed in several studies, and we also provided solar wind predictions for the February 2008 Hubble Space Telescope campaign of auroral observations at Saturn. First, we present the results of an extensive model validation with earlier heliospheric solar wind observations from the Pioneer, Voyager and Ulysses spacecraft. Second, we further verify our model with the available solar wind plasma and interplanetary magnetic field data from Cassini. Finally, we demonstrate that we are able to predict solar wind conditions upstream of Saturn's bow shock about three weeks in advance in real time, using the latest solar wind browse data from ACE as input. The reliability of such predictions has been tested on a statistical basis with a series of model runs.