Ap in Real-Time

Ellen Clarke[1], Alan Thomson[1] and Hans-Joachim Linthe[2]

1British Geological Survey, West Mains Road, Edinburgh EH9 3LA Scotland
2Adolf-Schmidt-Observatory, Lindenstr. 7, D-14823, Niemegk, Germany

The 3-hourly planetary indices Kp and ap and the daily planetary index, Ap, which are derived by GeoForschungsZentrum (GFZ), Potsdam, on behalf of the International Service of Geomagnetic Indices (ISGI), are made available twice per month. This time delay is inevitable because of the need for a high quality homogenous data set. However, the process may not be sufficiently responsive to the needs of the space weather community, in particular forecasters, where small discrepancies in the data are usually less important than their timely availability. An automated algorithm has been developed by the British Geological Survey (BGS) to derive real-time estimates of the ap and Ap indices, called apest and Apest respectively. These are available on line at www.geomag.bgs.ac.uk/gifs/apindex.html. The derivation process of these indices is described and has been designed to match that of the definitive indices as closely as possible. A comparison between BGS apest, Apest and the corresponding definitive values is presented. Modifications to the derivation process are still on going and will take advantage of the advances made by the INTERMAGNET program in data delivery. Ultimately GFZ will assume responsibility for derivation and delivery of the real time indices, which could be considered quick-look or provisional values. Real time Ap and the related estimated Kp index may find use in various ESA space weather pilot projects, for example, in atmospheric drag models and in nowcasting and forecasting of the electron content of the ionosphere for satellite navigation purposes.