Forecasting Solar and Geomagnetic Activity for Atmospheric Density Models

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We review the 14-year association between BGS and ESOC in long- and short-term geomagnetic (Ap) and solar index (F10.7, SSN) prediction software. We provide brief descriptions of the 'SOLMAG' (long term - solar cycle) and 'PDFLAP' (short term - 27 days ahead) algorithms and some examples of forecast accuracy over the decade+ of service within ESOC. Recently, improved predictions of the Ap index have been made possible using neural network techniques and index climatology. As a result 'PDFLAP2' is now in service with ESOC (as of January 2003). Future plans include making use of the high accuracy real time estimated Ap devised by BGS and GFZ (Potsdam). We also discuss where further improvements in density modelling may be expected. BGS real time indices and forecasts are now available for use within the ESA program, further information may be found at:

- o http://www.geomag.bgs.ac.uk/gifs/forecast.html and
- o http://www.geomag.bgs.ac.uk/images/aphisto.jpg.