

3.5.6.3 Special Bureau for Tides

The IERS Special Bureau for Tides collects datasets related to the effects of tides on Earth rotation and geocentre motions. Like the other special bureaus of the GGFC, the Bureau for Tides generates most of its own product datasets by analyzing the results of numerical computer models of the relevant geophysical fluids, in this case of both ocean tides and atmospheric tides. For example, as more realistic numerical hydrodynamic models of ocean tides are developed, the Bureau endeavors to obtain the tidal elevation and current velocity data from these models and to determine and tabulate the implied Earth-rotation effects. The data archive that the Bureau maintains has slowly grown as individual tidal investigators contribute their modeling results.

During 2002 most activity was devoted to obtaining updated models of diurnal and semidiurnal ocean tides and to deducing the tidal angular momentum from atmospheric circulation models. Efforts have also been devoted to improving models of the small long-period ocean tides (periods between 5 days and 18.6 years). Particularly noteworthy is the recent improvement in models of the fortnightly tide M_2 , where clear phase lag differences are seen between the Atlantic and Pacific Oceans. Atmospheric tide estimates have been deduced from the products of several meteorological centres, and it appears that recent operational models produce more accurate tidal signals than do reanalysis products. The Earth-orientation predictions from these improved models will be computed and released over the coming year.

The data collected by the Special Bureau are publicly available via the internet. The web site of the Special Bureau (bowie.gsfc.nasa.gov/ggfc/tides) continues to see a slow but steady growth in the number of "hits" per day. The figure below shows the daily hits on one particular web page during October 2002. (This particular web page is the site's tutorial page that presents an introductory overview of the effects of tides on Earth rotation.)

Richard D. Ray

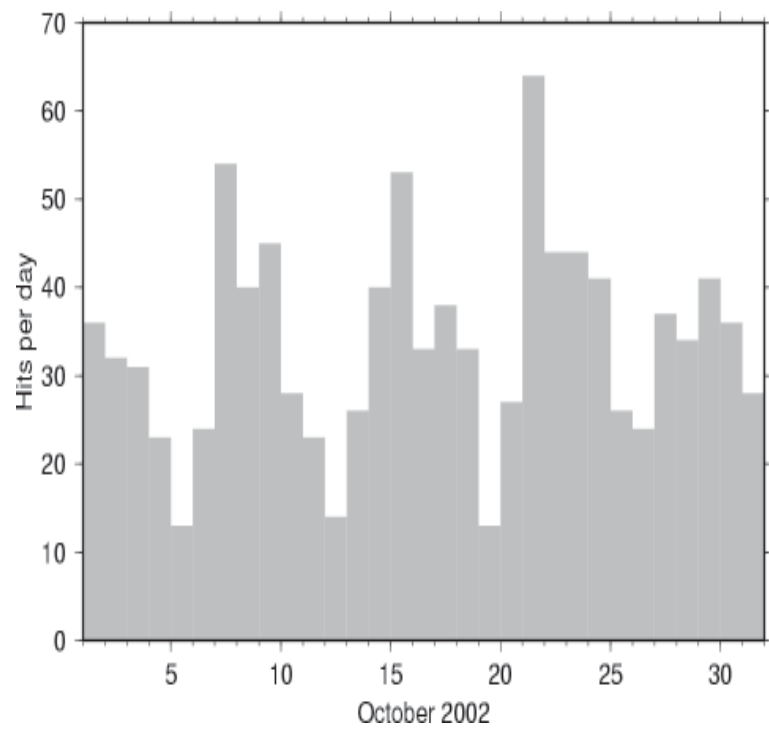


Fig. 1: Number of unique daily hits on one particular page of the Special Bureau for Tides web site during October 2002. The minima all occur on Saturdays. Highest activity occurs either Tuesdays or Mondays.