

Proper Motions of Coronal Bright Point

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Abstract

Bright points are most common magnetic formations in the Solar Corona. The purpose of our work is to study the movements of Coronal Bright Points. In this paper, we use SDO data. We take visually long period bright points and prepare relevant fits file series for processing. Our software algorithm automatically follows the selected bright point and captures the heliographic coordinates of its centroid in the fits file series. At the same time, the program outlines the pixel area of a coronal bright point and derives orientation and other characteristics of a fitted ellipse. For the statistical analysis of coordinates, we eliminate the solar rotational component from the longitudinal motion. The final result shows that in all processed data of bright points (100 bright points) longitudinal and latitudinal movements show sharply expressed oscillations. We estimated oscillation periods and the correlation between longitudinal and latitudinal oscillations. We also studied period of orientation changes of bright points. The research reveals long period oscillations and short period oscillations. We studied latitudinal dependence of bright point proper motion features.