



Longitudinal distribution of weak photospheric magnetic fields

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Previously we considered the longitudinal asymmetry of strong photospheric magnetic fields with $B > 100$ G for 1976-2203 (NSO Kitt Peak data). The following difference between the longitudinal asymmetry distributions for the ascending and the descending phases of the 11-year solar cycle was found: the maximum of the distribution is situated around 180 deg. and 0/360 deg., respectively. In the present work when considering weak magnetic fields, we observe different longitudinal distributions for the ascending and the descending periods of solar cycle too. In contrast to the strong fields the weak fields are localized at 0/360 deg. for the ascending phase and 180 deg. for the descending one, i.e. in anti-phase to the strong magnetic fields. However, a completely different picture was discovered for the longitudinal distribution of coronal holes (NOAA catalogue of coronal holes, 1973-1995). In the distribution of coronal holes two preferred longitudes are observed around 90 deg. and 270 deg. No systematic changes in the course of the solar cycle are discovered. This project was supported by the Russian Foundation of Fundamental Research, grant No 07-02-00920.