***Solar Brightness Variations as they would be Observed by Kepler Telescope***

***Nina-Elisabeth Nemec*** [1,2] *[nemec@mps.mpg.de], A. I. Shapiro* [1]*, N. A. Krivova* [1]*, R. Cameron* [1]*, S. K. Solanki* [1,3]*, and S. Dreizler* [2]

[1] *Max-Planck-Institut für Sonnensystemforschung, Göttingen, Germany*
[2] *Institute for Astrophysics, Georg-August-University, Göttingen, Germany*
[3] *School of Space Research, Kyung Hee University, Yongjin, Republic of Korea*

Recent planet-hunting missions, such as CoRoT and Kepler opened new perspectives for studying stellar photometric variabilities on timescales of stellar rotation and below. They led to considerable efforts aimed at establishing general patterns of stellar photometric variations (e.g. dependences on rotational periods and fundamental stellar parameters). Comparisons of stellar variabilities to that of the Sun are of special interest.

However, due to the special position of the Earth-bound observer, solar brightness variations are measured from the equatorial plane while stars are observed from arbitrary directions. We model solar brightness variations on timescales of the solar rotational period and below as they would be observed out of ecliptic and study the dependence of stellar variability on the inclination angle. The distribution of the magnetic features on the solar surface is calculated with the Surface Flux Transport Model developed at MPS. This allows to decompose solar variability into two components: one caused by transits of magnetic features over the visible solar disk as the Sun rotates and another one due to the evolution of these features.

In the future, we will extend our model to stars with different rotational periods and fundamental parameters. A comparison of observational and simulated data will show which, if any physical concepts of solar brightness variability have to be altered to reproduce the distribution of Sun-like stars variability.