

The Variability of Sun-like Stars

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The Solar-Stellar Spectrograph (SSS) project at Lowell Observatory has now been in regular operation for 25 years – enough to resolve multiple cycles in a large set of solar analog stars, as well as a full solar Hale cycle. Overlap of some SSS stars with Mount Wilson Observatory (MWO) HK Project targets yields some activity records in excess of fifty years. Contemporaneous Strömgren b , y observations from Lowell and Fairborn (Tennessee State) Observatory enables analysis of activity-brightness variations of many of these stars. We therefore now have a reasonably comprehensive picture of solar variability in the stellar context – at least as far as Ca II H&K manifestations of activity are concerned. In this talk, I will review recent progress and key results, including significant progress in cross-calibration of the solar-stellar and SSS-MWO data sets. In particular, I will address the prevalence of flat activity (FA) versus cycling states in solar analog stars, and recent evidence for a FA-cycling transition in one star, with attendant onset of brightness variability: perhaps our first convincing glimpse of a stellar Maunder Minimum transition. I will conclude with a brief review of the status of the now-aging SSS project at Lowell, and our plans for the next stage of synoptic stellar cycles observations.