Flares in A-type stars?

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Abstract

Recently, flare-like events have been detected in the Kepler light curves of A-type stars. This discovery is surprising, because flaring requires the presence of magnetic fields in the stellar atmospheres, which at least in the solar case, are believed to occur only in the presence of a dynamo. The convective envelopes of A-type stars are too shallow to support an efficient dynamo and therefore these stars should not show flares. We reinvestigated the light curves of 50% of the flaring A-type stars, using the same criteria previously used to detect flares in the Kepler Q1 data of M and K dwarfs. Our results show a significantly lower number of flare-like events in the studied A-type stars, even though we use more data than in previous analyses. Despite our results, we confirm the occurrence of flares in the light curves of these A-type stars.