

A sparse population of young stars in Cepheus

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Abstract

Once mixed in the ambient galactic plane stellar population, young stars are virtually indistinguishable because neither their global photometric properties nor the presence of nearby gas can help to disentangle them from older ones. Nevertheless, the study of the *RasTyc* sample revealed 4 lithium-rich field stars displaying the same space motion, which are located within a few degrees from each other on the celestial sphere near the *Cepheus-Cassiopeia* complex and at a similar distance from the Sun. Both physical and kinematical indicators show that all these stars are young, with ages in the range 10 – 30 Myr. Using multivariate analysis methods, we selected optical counterparts of ROSAT All-Sky Survey / XMM-Newton X-ray sources cross-identified with late-type stars around these 4 young stars. Recent intermediate- and high-resolution spectroscopic observations of this sample allowed us to discover additional lithium-rich sources. Our preliminary results showed that some of them share the same space motion as the 4 young comoving stars. They have properties rather similar to the members of the TW Hydrae association, although they seem to be slightly older and are located in the northern hemisphere. Nearby young stars in the field are of great importance to understand the recent local history of star formation, as well as to give new insight into the process of star formation outside standard star-forming regions and to study the evolution of circumstellar discs.

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