

An unusual abundance of T Tauri stars? NIR study of the southern high-mass star-forming region RCW 34

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Abstract. RCW 34 is a special star-forming region with a few stars showing an infrared excess, but seems as if it has an uncommon abundance in T Tauri stars. This possibility was confirmed by (i) clustering of classical T Tauri (CTT) stars in the two-color diagram, (ii) clustering of pre-main-sequence stars in the color-magnitude diagram, as well as (iii) the significant clustering at dimensions larger than the image-frame size, indicated by the second ‘bump’ in the two-point correlation analysis. A possible explanation for the above features could be the existence of an underlying wide CTT cluster with a smaller cluster centered around the massive star. The K_s -band luminosity function ($\alpha = 0.31$) of RCW 34 shows that it is indeed a region of low stellar masses with an age of about of 1 Myr. Spectroscopic confirmation of such an underlying T Tauri cluster is necessary before any definite conclusions can be reached.

Keywords. methods: data analysis, techniques: image processing, techniques: photometric, stars: formation, stars: fundamental parameters, stars: luminosity function, mass function, stars: pre-main-sequence, infrared: stars

The full poster (in pdf format) is available at
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