

Título/Title:

On the photometric variability of low-mass young stars in the VVV survey

Orientador/Supervisor:

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Descrição/Description:

The VISTA Variables in the Via Lactea (VVV) public survey is a multi-epoch survey in the 5 near-infrared (NIR) bands Z, Y, J, H, K. This survey spans 5 years and covers a 520 deg² area of the inner Galactic plane. It was performed using the NIR camera on the 4m telescope Visible and Infrared Survey Telescope for Astronomy (VISTA). The main goal of this survey, due to its multi-epoch observation, is to detect a large number of variable objects in open and globular clusters, including star formation regions.

In this work we intend to analyse the public catalogue and create a database with the sources corresponding to low-mass Young Stellar Objects. In order to identify the candidates, we intend to compare with other surveys like GLIMPSE and to use color-magnitude selection criteria.

This work will be an important stepping stone in the study and understanding of the evolution of protostars and accreting low-mass young stars, from embedded protostars to classical T Tauri stars and Weak-line T Tauri stars. Another key component of this project concerns the potential discovery of new eruptive young stars, such as FUors and EXors, which are characterized by high amplitude photometric variability, caused by accretion events. The observation and study of these high-variable stars is critical to increase our understanding of the physics behind their outburst mechanisms.