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Microlensing events in the galactic center

The search and study of the microlensing events in the three innermost regions of the galaxy of 1.5 deg square each (tiles 332, 333 and 334) was performed using the data of the VVV Survey. The detection was done with a code, wrote in python, that identify the microlensing events using statistics and applying conditions according to the form of the standard microlensing model giving a quality value to every time series related to the possibility that the event is a real microlensing event. Then it is necessary to do a visual inspection to select the best candidates. The parameters of every event (umin, tmax, tscale, blending) were computed using the standard microlensing model. The relation between positions and tmax of every event was analyzed to discard repeated events and at the same time complement the light curves of them. The results are about 200 events which had not previously been detected, with a wide range of timescales which gives us candidates from floating planets to black holes. The main idea is to study some characteristics, such as the spatial and timescale distribution, the mass function, etc. in the mentioned area to get clues about the distribution of dark matter in the galactic center, the presence of black holes and even the formation of the galactic bulge, and also to compare these characteristics among the tiles that are being studied.