

Peanut shaped structures in edge-on galaxies

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A photometric analysis of a sample of edge-on galaxies harboring a peanut shaped structure is presented. This structure is ideally suited to study the bar driven evolution of galaxies since it is slightly connected to the presence of vertical bar resonances. For our study we use K-band imaging which is dominated by Population II stars and minimally affected by dust. Applying the unsharp masking filtering technique we are able to isolate the periodic orbit families at the origin of the particular morphology of a peanut shaped structure. The rearrangement of disk material in the vertical direction through the presence of a bar is evidenced by our study of vertical scale heights along the major axis of the galaxies. Fitting of generalized Gaussians (equivalent to a Sersic law) to the vertical surface brightness profiles shows a radial variation of scale heights reaching a maximum at positions where the peanut structure is most prominent.

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