

## The Variable Stars in NGC 6229

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**Abstract.** We present results of a variability survey in the outer-halo globular cluster NGC 6229. Our main goal is to shed light on the origin of the bimodal horizontal branch (HB) of this cluster.

### 1. Introduction

Second-parameter candidates can be divided into two categories: Those of *Type A* do not affect the HB luminosity (hence RR Lyrae periods), and include age and mass loss on the red giant branch. Those of *Type B* do affect the HB luminosity, and in this class fall all remaining candidates. NGC 6229 has a *bimodal HB*, and our main goal is to use the RR Lyrae variables to investigate whether the bimodality is caused by Type A or Type B second parameters.

### 2. Results

Using CCD frames in *B* and *V* forty previously known or suggested variables had their light curves investigated. Five of them turned out to be non-variables, twenty-seven are RR Lyrae stars and three stars lie above the HB. For the RR Lyrae stars, we find a period shift at constant amplitude (and [Fe/H]) with respect to M3 which is  $\approx 70\%$  that between M3 and M15. This constitutes evidence for a difference in luminosity between the HBs of M3 and NGC 6229, that of M3 being brighter. However, a Fourier decomposition analysis using the Jurcsik & Kovács (1996) method does not support this conclusion. At present, we have no explanation for this intriguing discrepancy.

### Reference

Jurcsik, J. & Kovács, G. 1996, *A&A*, 312, 111

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