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A critical analysis of three near-infrared photometric methods of estimating distances to cataclysmic variables

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(Submitted on 23 Jul 2011 (v1), last revised 27 Jul 2011 (this version, v2))

A critical analysis of three methods of estimating distances to cataclysmic variables (CVs) is performed. These methods, by Ak et al., Beuermann, and Knigge, all use near-infrared (JHK or Ks) magnitudes and the Barnes-Evans relation. We compare all three methods to distances measured by trigonometric parallax by Thorstensen, with Hubble Space Telescope, and with the HIPPARCOS spacecraft.

We find that the method of Ak et al. works best overall for all CVs, predicting distances on the average 4% less than those measured by trigonometric parallaxes. The method of Beuermann overestimates distances by 52%. The method of Knigge underestimates distances by 26%, although this was only ever meant as a lower limit, since it assumes all light comes from the secondary star.

Comments: 17 pages, 7 figures, 2 tables; accepted for publication in New Astronomy

Subjects: **Solar and Stellar Astrophysics (astro-ph.SR)**

Cite as: [arXiv:1107.4658](#) [astro-ph.SR]

(or [arXiv:1107.4658v2](#) [astro-ph.SR] for this version)

Submission history

From: Frederick Ringwald [[view email](#)]

[v1] Sat, 23 Jul 2011 05:17:50 GMT (158kb)

[v2] Wed, 27 Jul 2011 05:35:12 GMT (158kb)

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