V819 Cen = HD 115599

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Abstract

The period of V819 Cen was found in Asas data.

Introduction

Bright RR Lyr stars are rare in the current scenario of variable stars and this fact hampers us a detailed study of this class since large telescopes and/or very efficient high-resolution spectrographs are needed.

Recently, Gisela Maintz published "Proper identification of RR Lyrae stars brighter than 12.5 mag" (Astronomy and Astrophysics, 442, 381-384, 2005). The list is available on her homepage http://www.astro.uni-bonn.de/~gmaintz/ As she is a member of the BAV, Friedhelm Hund, Anton Paschke and occasionally other BAV members started an observing program with the aim of checking or completing Maintz's catalogue.
Most of the stars with missing data are southern stars, we observe at the observatories Hakos IAS and Hakos Farm (http://www.ias-observatory.org/) (http://www.natron.net/tour/hakos/start.html)
However, prior to perform new observations we analyze the data from the Asas Survey (http://www.astrouw.edu.pl/~gp/asas/asas.html).

V819 Cen immediately attracted our attention on the list of Maintz, since this star, whose data seem obsolete and uncertain, is actually very bright (<V>=9.02) and has a very small amplitude.

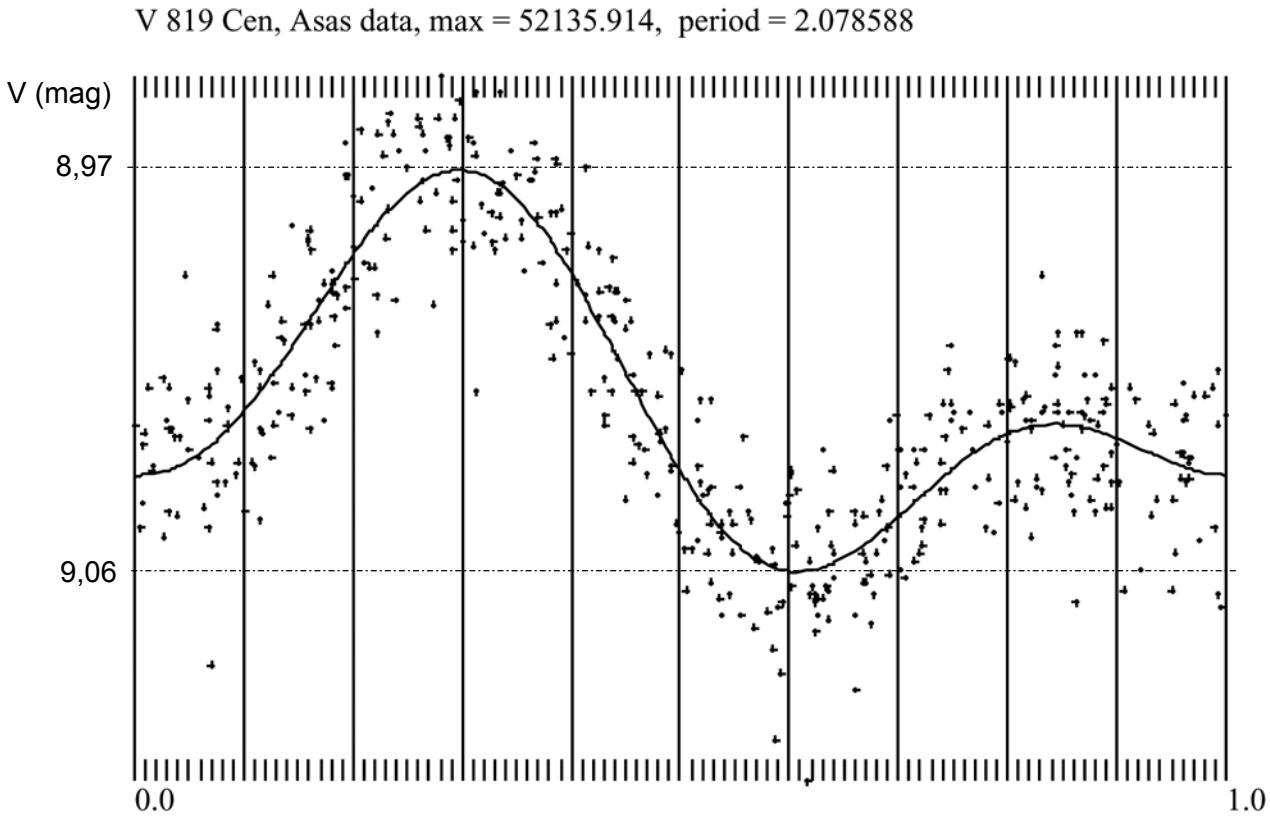
Prior knowledge

The variability of V819 Cen=HD 115599 was detected by A.F.J. Moffat (IBVS 1265). He found an amplitude of 0.07 mag and a period of 0.6755 days.
Simbad contains several references to this star, especially Catalano & Renson (1998, Catalougue des periodes observees pour les etoiles Ap, A&A 127, 421). Therefore, the belonging of V819 Cen to the RR Lyr class was implicitely questioned, even if the Moffat period still remains unchanged by Catalano.

Our work

Anton Paschke has analysed the ASAS data and found two periods, 0.402625 and 0.65724 days. We note that the latter is close to that given by Moffat. The observed ratio (0.61) is not common in RR Lyr stars; combined with the very small amplitude, the star deserved further analysis.

Ennio Poretti independently re-analysed the data and found that a single period of 2.078588 days fits the ASAS data in a very satisfactory way.



The conclusion

The light curve of V819 Cen over the period of 2.078588 days strongly supports the Ap nature of the star, i.e., the observed period is the rotational one and the light variability is caused by spots on the surface. In particular, the presence of spots is the only way to explain such a strange behaviour of the curve.
The range of variability (interpolated curve, Asas V-band data) is 8.97-9.06 mag