

New Companions to Double Star HJ 691 = WDS 05052+0914 = HD 240582

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Abstract: This paper has measurements of new companions to the double star HJ 691 in Orion. One of the new companions is close enough to suspect it is a physical binary.

While measuring the double star HJ 691 in Orion (see Table 1) with the currently known companion in WDS [1] labeled as C, an additional close companion labeled B was noted. Two other previously uncataloged companions labeled D and E were also measured.

At the time of writing (Feb.2016) the data (eg. proper motion) in the various catalogs accessible via the Vizier service [3] are not able to indicate if A-B is a physical or optical pair. For B there seems to be no

catalog data available yet. The A-B pair is closer than the Aitken criterion [4], therefore we could suspect that it is a physical binary.

References

- [1] The Washington Visual Double Star Catalog (Mason+ 2001-2014)
- [2] Aladin service: <http://aladin.u-strasbg.fr/>.

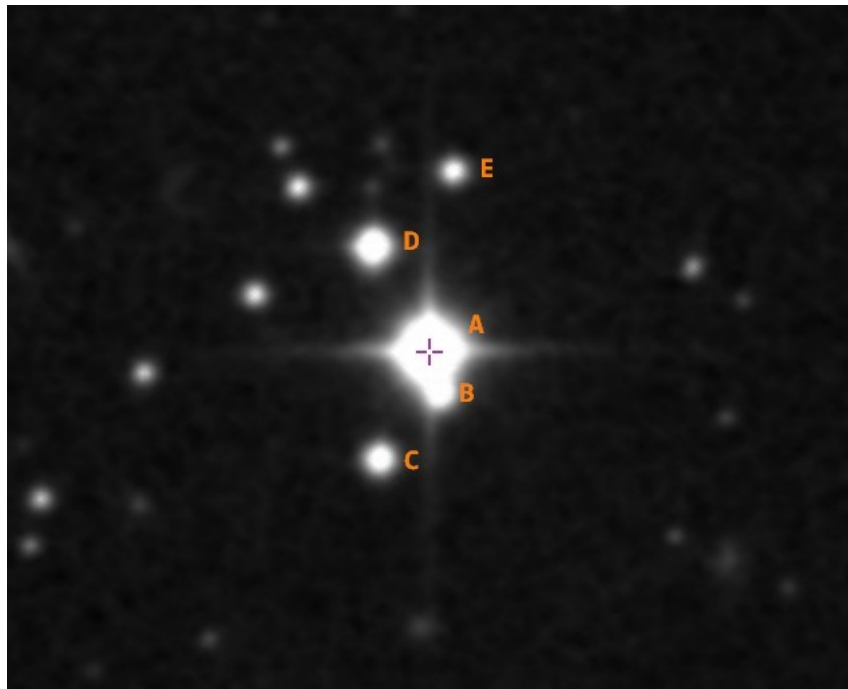


Figure 1. HJ 691 on Digital Sky Survey DSS2 blue image from Aladin service [2]. North is up.

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Table 1: Measures of HJ 691 components relative to A on 5 images taken with Newtonian reflector 0.25-m aperture f/4 with a CCD by Michael Jaeger of Austria. Images were taken on 2016 Jan 1.

Components	Green Magnitude (approximate)	Position angle [degrees]	Separation [arc seconds]
A	9.5		
A-B	11.8	199.5	7.5
A-C	12.0	155.4	23.1
A-D	11.7	29.1	23.7
A-E	12.8	352.1	36.5

Astrometric position of A = HD 240582 measured on the same images taken 2016 January 1 with UCAC4 reference stars: (2000.0): 5h 05m 14.28s \pm 0.03s +9° 13' 49.3" \pm 0.5"

[3] Vizier service: <http://vizier.u-strasbg.fr/>

[4] Francisco Rica Romero, 2006, "R.G. Aitken's Criterion to Detect Physical Pairs", *JDSO*, **2**, 36 - 41.

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