



Universiteit
Leiden
The Netherlands

The orbit of Bu G. C. 3291 = β 895 = Σ 888 AB

Bos, W.H. van den

Citation

Bos, W. H. van den. (1923). The orbit of Bu G. C. 3291 = β 895 = Σ 888 AB. *Bulletin Of The Astronomical Institutes Of The Netherlands*, 2, 25. Retrieved from <https://hdl.handle.net/1887/5610>

Version: Not Applicable (or Unknown)

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/5610>

Note: To cite this publication please use the final published version (if applicable).

BULLETIN OF THE ASTRONOMICAL INSTITUTES OF THE NETHERLANDS.

1923 December 19

Volume II.

No. 45.

COMMUNICATIONS FROM THE OBSERVATORY AT LEIDEN.

The orbit of Bu G. C. 3291 = β 895 = Σ 888 AB, by *W. H. van den Bos*.

R. A. 1925 $6^h15^m13^s$. mag 7.7—7.7.
Decl. 1925 $+28^\circ28'$. spec. A3.

The primary of Σ 888 was suspected of being a close double in 1827 by Sir JOHN HERSCHEL, using his 20 feet reflector of 18 inches aperture, but STRUVE and other observers, who measured the wider pair, failed to see any elongation.

In 1873 BURNHAM with his 6 inch Clark refractor again thought the primary elongated, in 70° or 250° , but two years later found it round with the $18\frac{1}{2}$ inch.

In 1879, with the same instrument, he detected an elongation in 120° , and in the same year made the first measure of the pair. If the orbit given below is correct, this was the actual discovery.

Since then the pair has been frequently observed by the great refractors, the distance being always less than $0''\cdot3$, and rapid direct motion was clearly shown. The measures during the period 1908—1914 were rather puzzling, and on my request Professor AITKEN very kindly communicated his unpublished

measures with the 36 inch 1917—1921. These showed, that the Greenwich measures in 1913 and 1914 (one night each) were erroneous, and that the pair had been very close during this time. The quadrant as given by AITKEN could not be harmonised with the law of areas; but as the components are equal, I changed the quadrant, and a set of elements was readily derived by ZWIERS' method. If this arrangement of the measures is correct, the elements will probably be close to the truth, as nearly a complete revolution has been described since 1879 in this case.

The elements, in CAMPBELL's notation, are:

P : 45.7 years, T : 1914.31, e : 0.88, a : $0''\cdot255$, i : $\pm 60^\circ 7$,
 ω : $289^\circ\cdot9$, Ω : $22^\circ\cdot7$; angles increasing.

Precession has been neglected.

The apparent elements, in THIELE's notation, are:

μ : $0^\circ1375$, a : $0''\cdot146$, A : $329^\circ\cdot0$, b : $0''\cdot116$, B : $32^\circ\cdot6$.

In the following list of observations the columns

1827.98	<i>h</i>	18	<i>In</i>	close double?	(comp.	96°	$0''\cdot13$
73.9	β	6	1	elong. $70^\circ?$	("	98°	$0''\cdot13$
75.9	β	$18\frac{1}{2}$	1	round	("	109°	$0''\cdot15$
79.00	β	$18\frac{1}{2}$	1	elong. 120°	("	122°	$0''\cdot19$
79.22	β	$18\frac{1}{2}$	1	$133^\circ\cdot3$	$+ 10^\circ\cdot5$	$+ 0''\cdot035$	$+ 0''\cdot08$
87.40	<i>Sp</i>	18	4	$147^\circ\cdot1$	$+ 5^\circ\cdot0$	$+ \cdot022$	$+ \cdot01$
89.13	<i>Sp</i>	18	4	$146^\circ\cdot7$	$+ 1^\circ\cdot2$	$+ \cdot005$	$- \cdot05$
91.18	β	36	3	$144^\circ\cdot6$	$- 4^\circ\cdot0$	$- \cdot019$	$- \cdot05$
91.78	β	36	3	$146^\circ\cdot0$	$- 3^\circ\cdot7$	$- \cdot017$	$- \cdot06$
98.32	<i>Doo</i>	18	1	$< 0\cdot25$	(comp.	$0''\cdot29$	
99.98	<i>Doo</i>	18	1	$176^\circ\cdot5$	$+ 14^\circ\cdot8$	$+ \cdot072$	$< + \cdot02$
1900.19	<i>A</i>	36	4	$156^\circ\cdot9$	$- 5^\circ\cdot1$	$- \cdot025$	$+ \cdot01$
00.9	<i>GO</i>	28	7	$162^\circ\cdot6$	$- 0^\circ\cdot1$	$- \cdot000$	$- \cdot01$
04.18	<i>A</i>	36	2	$167^\circ\cdot5$	$- 0^\circ\cdot9$	$- \cdot004$	$- \cdot04$
04.23	<i>Bies</i>	15	1	$164^\circ\cdot2$	$- 4^\circ\cdot2$	$- \cdot019$	$+ \cdot04$
06.18	<i>A</i>	36	1	$171^\circ\cdot5$	$+ 0^\circ\cdot4$	$+ \cdot002$	$- \cdot03$
06.48	<i>Wz</i>	$19\frac{1}{4}$	4	$176^\circ\cdot4$	$+ 3^\circ\cdot9$	$+ \cdot017$	$+ \cdot03$
08.11	<i>Bies</i>	15	2,1	$161^\circ\cdot3$	$- 14^\circ\cdot7$	$- \cdot059$	$+ \cdot02$
10.2	<i>GO</i>	28	3	$169^\circ\cdot4$	$- 12^\circ\cdot1$	$- \cdot040$	$- \cdot03$
11.2	<i>GO</i>	28	1	$206^\circ?$	(comp.	185°	$0''\cdot17$
13.0	<i>GO</i>	28	1	$190^\circ\cdot1$	("	198°	$0''\cdot10$
14.1	<i>GO</i>	28	1	$189^\circ\cdot3$	("	$290^\circ \pm$	$0''\cdot03$
17.99	<i>A</i>	36	1	$93^\circ\cdot7$	$+ 8^\circ\cdot9$	$+ \cdot017$	$+ \cdot04$
19.92	<i>A</i>	36	2	$95^\circ\cdot0$	$- 4^\circ\cdot6$	$- \cdot010$	$+ \cdot01$
21.85	<i>A</i>	36	1	$107^\circ\cdot1$	$- 3^\circ\cdot5$	$- \cdot010$	$+ \cdot02$