Photographic estimates of AZ Sagittarii made on Franklin-Adams plates

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by *Ejnar Hertzsprung*.

The spectrum of the variable star AZ Sgr, $18^h\ 16^m\ 9^s$, $-\ 30°\ 39'{\cdot}5$ (1875) is classified as F9 and as the character of the variation is still unknown, I measured the star in the Schilt photometer on the 281 Franklin-Adams plates available. Two comparison stars, a and b, were used, the positions of which relative to the variable are $a - v = +\ 6^s$, $-\ 2'{\cdot}7$ and $b - v = -\ 19^s$, $+\ 1'{\cdot}1$. The galvanometer readings were transformed into provisional magnitudes, m', by the aid of the table given by WESSELINK in *B.A.N.* No. 318. In the accompanying table 108 values for as many nights of the brightness of the variable are given in the scale of m' relatively to the mean of the two comparison stars, the mean difference between which is ·75 m′, with a mean deviation for a single plate of ± ·12 m′. If regard is taken to the errors of measurement this mean deviation reduces to ± ·11 m′ or about 15 per cent.

In only 6 cases the difference between the variable and the mean of the two comparison stars slightly exceeds ·4 m′. The negligence of the variation of the gradation from plate to plate may therefore be supposed to have done no serious harm. The mean error of a single observation is found to be ± ·05 m′ from the differences between consecutive plates taken during the same night.

No regularity in the variation of this star is shown by the present observations.

AZ Sagittarii

J. D. −2420000	v − (a+b)/2	number of plates	J. D. −2420000	v − (a+b)/2	number of plates	J. D. −2420000	v − (a+b)/2	number of plates	J. D. −2420000	v − (a+b)/2	number of plates
d	m′		d	m′		d	m′		d	m′	
7597·5	− ·08	2	7987·4	·19	19	8427·3	− ·22	1	8714·3	·10	1
7632·3	− ·07	14	8015·3	− ·05	2	28·3	− ·19	1	15·3	·14	2
33·3	− ·10	2	37·4	− ·14	3	33·3	·02	2	17·3	·12	2
35·2	− ·04	3	70·3	− ·14	2	48·3	·08	2	18·3	·20	2
36·3	− ·07	2	76·3	− ·14	2	50·3	·03	2	19·5	·19	2
51·3	·13	2	77·3	− ·23	2	52·3	·04	2	21·3	·19	1
57·3	·37	2	95·3	·07	2	56·3	− ·13	2	22·5	·32	2
65·3	·34	2	99·3	·16	2	58·3	− ·32	1	23·3	·27	1
81·3	− ·25	2	8105·3	·17	2	61·3	− ·19	2	27·3	·34	2
82·3	− ·31	2	8341·4	− ·06	2	76·3	− ·31	1	44·3	− ·02	2
84·3	− ·28	2	43·3	− ·09	2	77·2	− ·35	2	45·3	− ·04	2
85·4	− ·19	2	44·3	− ·20	2	8611·6	·13	2	48·4	− ·23	2
86·3	− ·15	2	46·5	− ·17	2	39·5	·26	1	53·4	− ·12	4
88·3	− ·14	4	60·3	− ·20	2	41·6	·09	2	55·2	− ·09	2
90·3	− ·15	4	62·3	− ·25	2	59·5	− ·20	2	59·3	− ·19	2
7711·3	− ·09	2	87·2	·24	2	60·5	− ·27	2	72·3	− ·43	2
12·3	− ·10	2	91·2	·25	2	61·6	− ·19	5	73·4	− ·37	1
13·4	− ·12	1	94·3	·30	4	64·6	− ·18	1	74·3	− ·38	2
15·3	− ·16	2	96·3	·40	2	71·5	− ·28	2	75·4	− ·26	2
17·3	− ·03	1	97·4	·49	2	72·5	− ·29	1	76·3	− ·37	2
7901·6	− ·14	2	98·4	·53	2	73·6	− ·29	2	78·3	− ·22	4
06·6	− ·07	1	8401·3	·41	1	86·6	− ·21	2	79·3	− ·27	2
25·6	− ·11	2	02·4	·49	2	88·6	− ·23	2	80·3	− ·22	4
49·6	− ·07	2	04·3	·50	2	93·5	− ·25	2	81·4	− ·15	2
58·5	− ·14	1	19·3	− ·11	2	94·5	− ·26	2	83·3	− ·10	4
82·4	·11	16	20·3	− ·13	2	95·5	− ·24	2	84·3	− ·15	2
83·4	·12	20	24·3	− ·16	3	99·5	− ·08	2	8815·3	·03	2