NOTE

A NEW VARIABLE STAR IN AQUARIUS

As already has been announced (SCHOENMAKER, 1968), the reductions of photo-electric observations of the RR Lyrae star BR Aqr showed that one of the two comparison stars used was variable. The 1900.0 coordinates of this variable are $\alpha = 23^{\mathrm{h}}34^{\mathrm{m}}04^{\mathrm{s}}$, $\delta = -9°42'.7$. A finding chart is shown in figure 1.
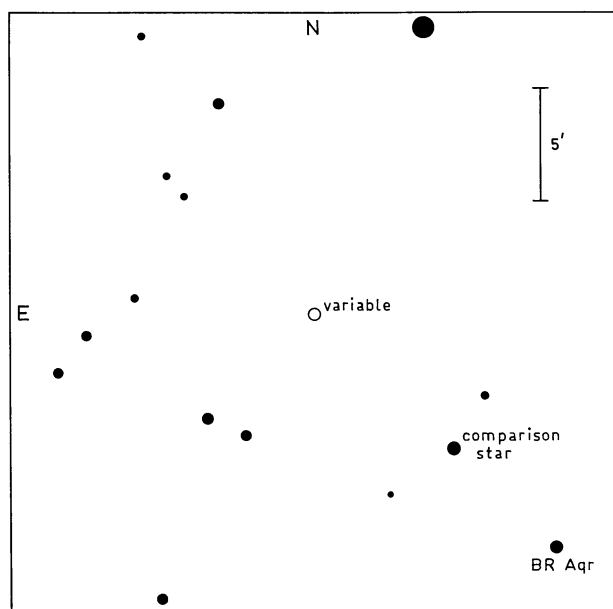

Figure 1.   Identification chart.

The observations have been made in 1967 by Mr. J. W. Pel and Mr. F. Velthuyse with the Walraven five-colour photometer attached to the 90-cm light-collector of the Leiden Southern Station. The accuracy of the W measurements, however, was so low that they have been discarded. The reduction was similar to that described by WALRAVEN *et al.* (1964). The magnitude and colours of the comparison star used are: $V = 11.06$, $V-B = +0.256$, $B-U = +0.370$, $B-L = +0.320$ (V is in the *UBV* system; the colours are expressed as logarithms of the relevant intensity ratio). In table 1 the individual measurements of the variable with respect to this comparison star are given.

TABLE 1

Individual measurements

Hel. J.D. −2 439 000	Phase	ΔV (mag)	$\Delta(V-B)$	$\Delta(B-U)$ (log intensity)	$\Delta(B-L)$
685.573	.075	−0.082	−0.158	+0.021	−0.106
709.448	.023	+0.016	−0.174	+0.051	−0.118
711.450	.288	−0.093	−0.160	+0.029	−0.103
712.462	.939	+0.271	−0.164	+0.014	−0.122
712.501	.003	+0.012	−0.146	+0.011	−0.137
721.422	.556	−0.021	−0.166	−0.003	−0.116
721.448	.598	−0.099	−0.155	+0.078	−0.122
721.482	.654	−0.104	−0.175	+0.025	−0.100
721.529	.730	−0.098	−0.160	+0.017	−0.129
721.554	.771	−0.055	−0.157	+0.072	−0.111
721.589	.828	+0.054	−0.144	+0.039	−0.137
725.431	.096	−0.197	−0.139	−0.017	−0.123
725.451	.128	−0.257	−0.134	+0.021	−0.134
726.443	.746	−0.137	−0.152	+0.011	−0.119
726.493	.828	+0.059	−0.150	+0.021	−0.119
726.520	.873	+0.216	−0.169	+0.077	−0.119
726.539	.903	+0.196	−0.147	+0.035	−0.137
745.436	.730	−0.040	−0.166	+0.013	−0.126
746.402	.306	+0.006	−0.153	+0.001	−0.129
746.434	.358	+0.153	−0.176	+0.075	−0.112
746.469	.415	+0.161	−0.156	+0.014	−0.134
748.366	.509	+0.042	−0.176	+0.042	−0.134
748.418	.594	−0.094	−0.165	+0.058	−0.113
755.417	.012	−0.039	−0.157	+0.033	−0.137
757.355	.173	−0.184	−0.172	+0.049	−0.125
758.353	.801	+0.044	−0.159	+0.047	−0.127
759.364	.450	+0.109	−0.159	+0.018	−0.102
759.419	.540	−0.037	−0.157	+0.035	−0.141
759.441	.572	−0.086	−0.157	+0.048	−0.125
759.470	.623	−0.112	−0.161	+0.026	−0.140
767.341	.463	+0.074	−0.157	+0.059	−0.135
770.400	.454	+0.158	−0.186	+0.035	−0.120
770.435	.511	+0.011	−0.160	+0.018	−0.133
771.292	.909	+0.250	−0.162	+0.142	−0.128
771.437	.145	−0.191	−0.157	+0.026	−0.124

Because of the few minima observed, no least-squares solution for the period was made. The phases were computed with a preliminary reciprocal period according to the formula

$$\text{phase} = 1.6313 \times (\text{J.D. Hel} - 2430000).$$

Graphically, a primary minimum was found at phase .93. The corresponding light-elements are

$$\min = 2439726.56 + 0^{d}.6130\ E.$$

An analysis with differential corrections showed that the mean error of this period is $0^{d}.0003$.

The resulting light- and colour-curves are shown in figure 2. The V magnitude ranges from 10.80 to 11.33. According to the shape of the light-curve the variable is probably a contact binary system. There is a slight indication that the maximum following the primary minimum is brighter than the other. In the colour-curves no variation is present.

I wish to express my gratitude to Dr. K. K. Kwee for his valuable help during the reduction of the observations and the preparation of this note.

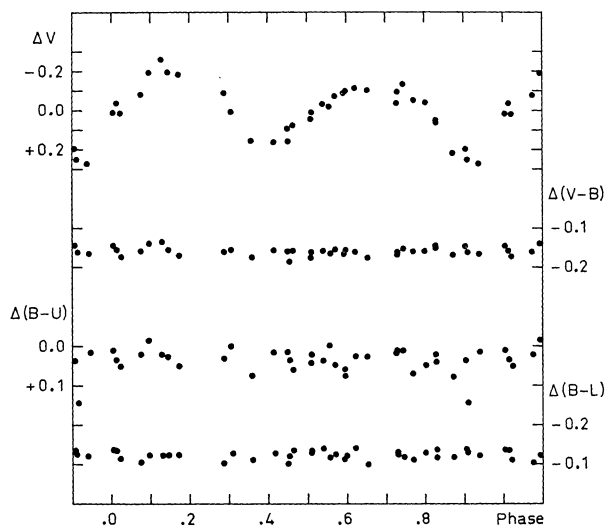17 September 1968   A. A. SCHOENMAKER

Figure 2. Light- and colour-curves. ΔV is expressed in magnitudes; $\Delta(V-B)$, $\Delta(B-U)$ and $\Delta(B-L)$ in logarithms of intensity.

References

A. A. SCHOENMAKER, 1968, *Comm. 27 I.A.U. Inf. Bull. Var. Stars* No. 279

J. H. WALRAVEN, J. TINBERGEN and TH. WALRAVEN, 1964, *Bull. Astr. Inst. Netherlands* **17** 520

ERRATA

1935, *Bull. Astr. Inst. Netherlands* **7** 253 ("Provisional ephemerides of 33 variable stars in the constellations Norma and Ara" by W. E. Kruytbosch).

Page 260, identification chart 1 should be 2, and identification chart 2 should be 1.

1967, *Bull. Astr. Inst. Netherlands* **19** 17 ("RS Ophiuchi: Reduction of spectra from the 1958 outburst" by C. R. Tolbert, J. C. Pecker and S. R. Pottasch).

Page 18, in table 1 some of the dispersions listed in column 7 are incorrect. For the Mt. Wilson plates, the dispersions listed as 14 A/mm should be 20 A/mm and those listed as 11 A/mm should be 30 A/mm. For the Mt. Palomar plates with dispersions listed as 8 A/mm, the correct dispersions are 8.9 A/mm for the blue sensitive plates and 13.5 A/mm for the red sensitive plates. These corrections apply only to table 1 and do not affect the further results in any way.

1967, *Bull. Astr. Inst. Netherlands* **19** 201 ("A 1417-MHz search for radio sources having a flux excess at short wavelengths" by M. M. Davis).

Page 223, the wrong position has been given for source DW 0202 + 31. The accurate interferometric position is R.A. (1950.0) = $02^h02^m9^s.6 \pm 0^s.2$, Decl. (1950.0) = $31°58'11'' \pm 3''$. A blue stellar-like object lies just to the north of this position on the 48-inch Palomar Schmidt prints.

1968, *Bull. Astr. Inst. Netherlands* **19** 414 ("On the possibility of amplification of 21-cm radio emission in high-velocity clouds" by H. G. van Bueren and J. H. Oort).

Page 414, formula (1): J in the numerator should be replaced by ΔJ.

224