# V1542 Aql IS AN ECLIPSING BINARY OF W UMa TYPE

## (BAV MITTEILUNGEN NO. 138)

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| Name of the object: |
| --- |
| V1542 Aql = GSC 1057.01309 = Brh V8 |

| Equatorial coordinates: | Equinox: |
| --- | --- |
| **R.A.**= $19^h46^m25^s1$   **DEC.**= $+08°45'12''$ | 2000 |

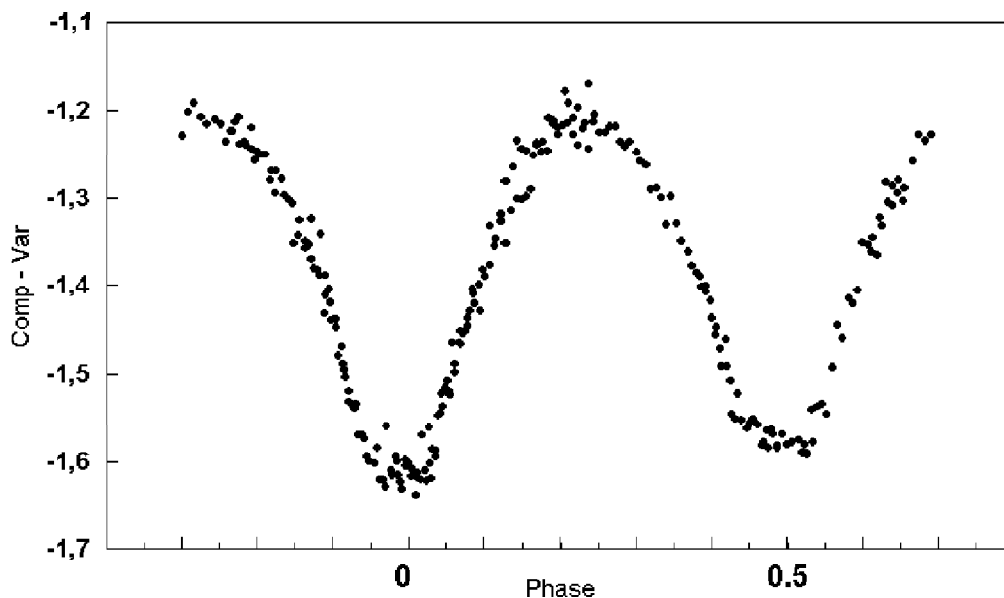| Observatory and telescope: |
| --- |
| W. Quester: Private observatory, 20-cm Cassegrain telescope $f/6.4$; K. Bernhard: Private observatory, 20-cm Schmidt–Cassegrain telescope |



**Figure 1.** Differential $V$ light curve of V1542 Aql measured in July 2001

| Detector: | W. Quester: ST-7E camera;<br>K. Bernhard: Starlight Xpress SX camera |
|---|---|

| Filter(s): | W. Quester: Bessel $V$;<br>K. Bernhard: None |
|---|---|

| Comparison star(s): | GSC 1057.01223, $V \approx 10\overset{m}{.}4$ |
|---|---|

| Check star(s): | GSC 1057.01437, GSC 1057.01527 |
|---|---|

| Transformed to a standard system: | No |
|---|---|

| Availability of the data: |
|---|
| Upon request |

| Type of variability: | W UMa |
|---|---|

**Remarks:**

V1542 Aql was discovered by Bernhard (1999) as a variable star. Bernhard and Lloyd (1999) published possible light curves and results of a period search. They concluded that the star either is a $\beta$ Cep-, $\delta$ Sct- or a W UMa-type variable with four possible periods in the range from 0.172675 to 0.417570 days.

W. Quester observed V1542 Aql during 4 nights in July 2001. The rms error of single observations is $\pm 0\overset{m}{.}02$. The light curve, folded with the period given below, shows variations of a W UMa-type eclipsing variable (Figure 1).

The following times of minima were observed (HJD 2400000 +):

| minimum time | type | observer | minimum time | type | observer |
|---|---|---|---|---|---|
| 51065.388 | s | Bernhard | 52113.3933(07) | p | Quester |
| 51080.405 | p | Bernhard | 52113.6000(15) | s | Quester |
| 51103.378 | p | Bernhard | 52115.4825(07) | p | Quester |
| 51111.3146(10) | p | Bernhard | 52116.5270(05) | s | Quester |
| 52112.5593(10) | p | Quester | | | |

Figures in brackets denote rms errors in units of the last decimal, p and s denote primary and secondary minima. The uncertainty of Bernhard's first three minima may be around $\pm 0.01$ day; these minimum times are based on only a few observations during each night. They were given lower weight in the calculation of the period. Resulting elements of the light variations are:

$$\text{Min p} = \text{HJD } 2452112.1411 + 0\overset{d}{.}4175361 \times E. \tag{1}$$
$$\phantom{\text{Min p} = \text{HJD } 2452112.} \pm 16 \phantom{111 + 0.4} \pm 13$$

References:

Bernhard, K., 1999, *vsnet-obs*, No. 19782,
        http://www.kusastro.kyoto-u.ac.jp/vsnet/Mail/obs19000/msg00782.html
Bernhard, K., Lloyd. C., 1999, *IBVS*, No. 4685