

## EVIDENCE FOR TRANSIENT COLOUR CHANGES OF ALGOL IN THE PAST

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(Not reviewed)

Most Algol-type variables are believed to be close, semi-detached binaries which have evolved from a rapid mass-transfer phase, which reversed the initial mass-ratio, to a relatively quiescent stage where only small-scale transient events perturb the dynamical and the photometrical properties of the system.

Of all Algol-systems, only the prototype Algol ( $\beta$  Per) itself is bright enough to be traceable in astronomical records reaching back more than 2000 years. Evidence based on medieval stellar lists and 19th-century visual observations strongly suggest that the intrinsic colour of Algol has been subject to substantial variations within historical times. On a few occasions Algol was apparently observed as reddish, which is at variance with its present blue-white appearance ( $B-V = -0.05$  to  $+0.10$ ).

The earliest reference to a reddish Algol was found in the Kitāb Suwar al-Kawākib al-Thābitah (Book of the Fixed Stars) by the Persian astronomer Abu 'l-Ḥusayn 'Abd ar-Raḥmān ibn 'Umar aṣ-Ṣūfī (903-986), who compared Algol in redness with  $\alpha$  Boo,  $\alpha$  Tau,  $\beta$  Gem,  $\alpha$  Sco,  $\alpha$  Ori &  $\alpha$  Hya. A similar and independent statement is found in the Liber Hermetis de XV Stellis, a medieval Latin astrological treatise which contains Hellenistic astrological material probably dating from the first few centuries A.D.

Algol was apparently observed as a reddish star by the Italian astronomer Pietro Angelo Secchi (1818-1878), one of the pioneers of stellar spectroscopy, who classified Algol in 1863 among reddish stars such as  $\alpha$  Sco,  $\alpha$  Tau,  $\alpha$  Ori,  $\alpha$  Boo and  $\beta$  Gem. However, only a few years later, Secchi listed Algol among the blue-white stars, such as  $\alpha$  Lyr and  $\alpha$  CMa. It is interesting to note that Algol experienced a major period-jump around 1854 (Frieboes-Conde *et al.*, 1970), which suggests a possible relation with mass-transfer events.

### References

- Frieboes-Conde, H., Herczeg, T. & Høg, E.: 1970, *Astron. Astro-phys.*, 4, 78.  
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