COMMISSIONS 27 AND 42 OF THE IAU
INFORMATION BULLETIN ON VARIABLE STARS
Number 4592

Konkoly Observatory
Budapest
7 May 1998
HU ISSN 0374 – 0676

A NEW δ SCUTI VARIABLE STAR – SAO 16394†

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In order to monitor δ Scuti variable star HR5437 the 4-channel photometer (Michel and Chevreton 1991) with Strömgren b filter was used. SAO 16408 was used as comparison, and SAO 16394 (HD 127411, A2, V=7.2) was used as check star. The three stars and sky background were observed simultaneously. All data were collected from 8 to 17 April 1997 using the 85 cm telescope at the Xinglong Station of Beijing Astronomical Observatory. The integration time was one minute. The time series of data covered about 42 hours. No evidence for any variability of SAO 16408 was found. However, we found variations in the brightness of SAO 16394. The light curves are shown in Fig. 1, where the ordinate is the b magnitude difference normalized to zero. We used Hao Jin-xin's program (1991) and the program PERIOD96 (Breger 1990, Sperl 1996) to complete the period analysis. Two frequencies were obtained. They are 23.06 cd^{-1} with an amplitude of 0.0044 mag, and 16.84 cd^{-1} with an amplitude of 0.0039 mag. The two-frequency solution can fit the light curves quite well (see Fig. 1). The fit curve of two frequencies is shown as a solid curve. Because the amplitudes of two frequencies are very small, the star SAO 16394 may be a nonradial δ Scuti star.

The interval covered by our data is short, therefore the precision of frequencies and amplitudes obtained might be low. In order to obtain more accurate results further observations are required.

This work was supported by a research grant from National Natural Science Fund of China (NSFC). The authors would like to express their thanks.

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†Based on observations collected at the Beijing Astronomical Observatory (China)

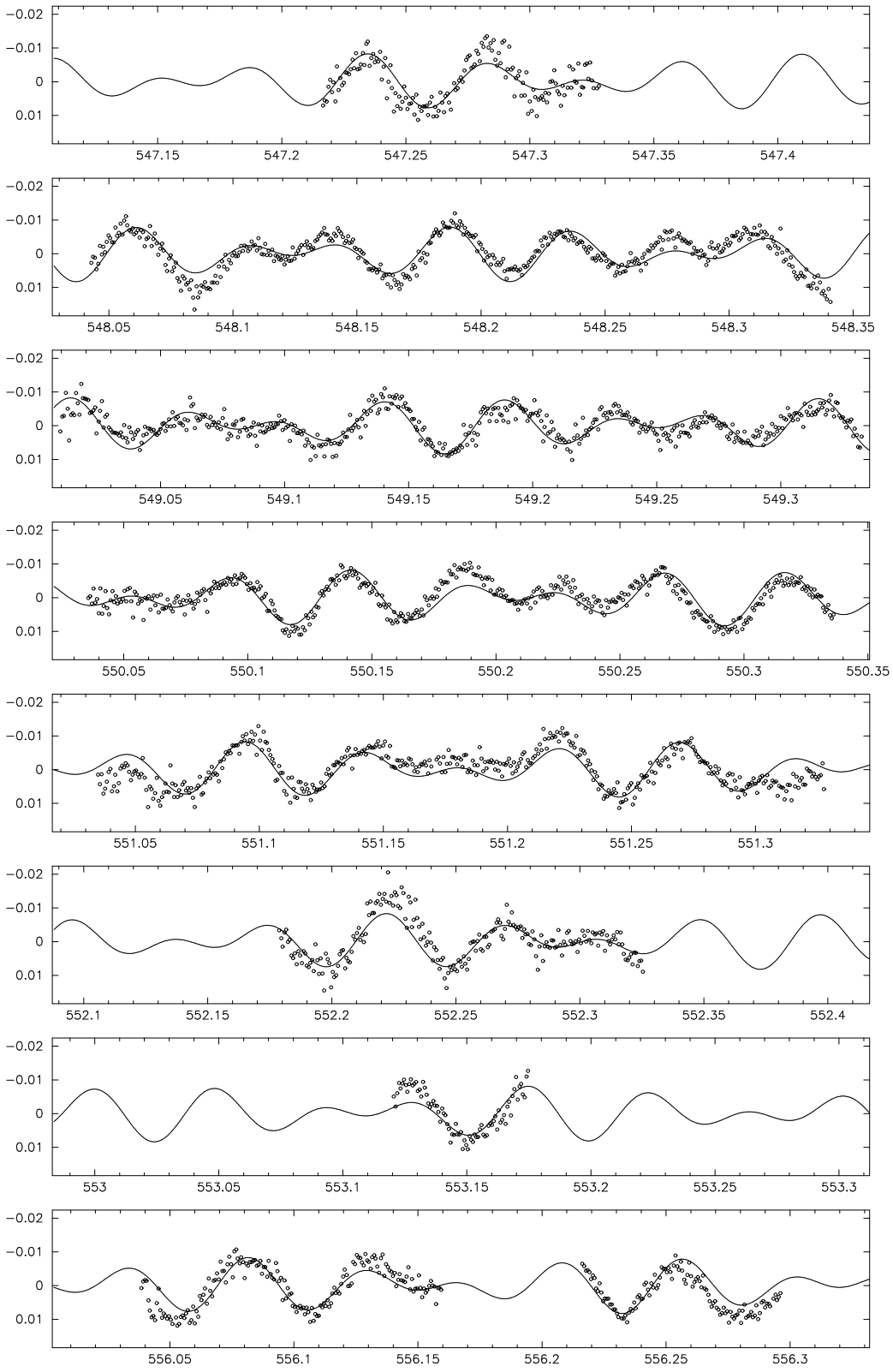

Figure 1. Light curve of SAO 16394 obtained in April 1997. The ordinate is the b magnitude difference (SAO 16394−SAO 16408) normalized to zero. The fit of the two-frequency solution is shown as a solid curve. The abscissa is the time (+HJD 2450000)