

VARIABLE STAR
BULLETIN

No. 20

Aug. '95

PHOTOGRAPHIC OBSERVATION OF NSV12245,
12376, 12656, 12883 & 13204
BY PROF. HURUHATA

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Prof. K. Suzuki and Prof. M. Huru-hata discovered 7 new variable stars in 1938 at National Science Museum, Tokyo. They took photographs of the field of alpha and eta Cygnus using astrophotograph (Dia.=104 mm, focal length=500 mm) and Agfa Isochrome Plate of the Museum. After checking 78 plates (17° x 12°) taken from Aug. '37 to Jan. '38, they announced the discovery of 7 new variable stars.^{1), 2)} However, only one of seven was registered as the variable, named V403 Cyg. The other 6 stars are still remained as the suspected variables.

One of the discoverer, Prof. M. Huru-hata carried out photographic observation at his home after retirement from the director of Tokyo Astronomical Observatory. Among the remained films, the author has estimated magnitudes of the above mentioned suspected 6 variables. As far as these stars are concerned, Prof. Huru-hata took photographs by 500 mm focal length camera, Tri-X film and with yellow green filters.³⁾

For V403 Cyg, the observation will be announced in near future including Prof. Huru-hata's and the author's recent estimation.

All of the finding charts shown here were cited from the discoverer's original report. Diameter of circle is 30' and top of chart is north direction. The sequence of comparison star was adopted from GSC.

- (1) NSV12245 = 28.1938 19h36m23s +35° 45' (1950.0)
Discoverer suggests UG type irregular variable having
mag. range 10.7 - 11.6(p). Prof. Huru-hata's 33 films
(from Oct.15 '77 to Feb.20 '78) show only 10.7 - 11.1
mag. change. Fig.1 shows finding chart.

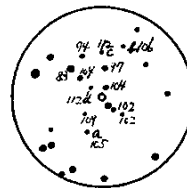


Fig.1

- (2) NSV12344 = 27.1938 19h41m19s +38° 13' .2 (1950.0)
 Discoveror suggests short period (less than 1 day) variable having mag. range 10.2 - 11.4(p). Fig.2 shows finding chart. Fig.3 shows light curve derived from Huruhata's 35 films taken from Oct.15 '77 to Feb. 22 '78. Estimated range of mag. is 10.8 - 11.4. According to the discrete Fourier transformation type periodgram, 2.0417day is suggested but the presence of this period is doubtful.

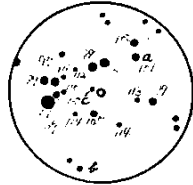


Fig.2

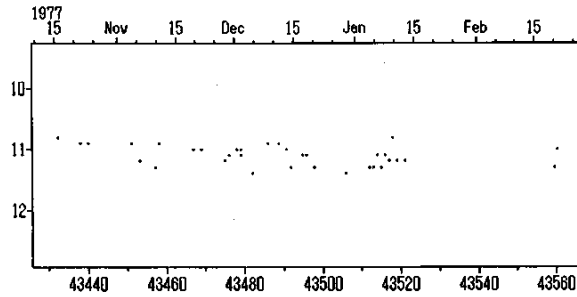


Fig.3

- (3) NSV12376 = 32.1938 19h43m06s +31° 10' (1950.0)
 Discoveror suggests semi-regular type. Mag. range 12.2 - 12.8(p). Fig.4 shows finding chart. Slight variation of mag.(11.7 - 12.0p) was estimated from Huruhata's film (31 films, Oct.15 '77 - Jan.12 '78).

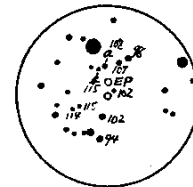


Fig.4

- (4) NSV12656 = 26.1938 19h57m08s +28° 16' (1950.0)
 Discoveror suggests cepheid type, having mag. range 11.4 - 12.3p. From Huruhata's film, occasionally faint mag. was estimated (32 films, Oct.15 '77 - Feb.21 '78, 12.6 - 13.5:mag.). Fig.5 and Fig.6 gives finding chart and light curve, respectively.

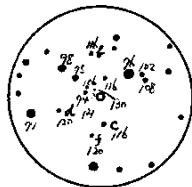


Fig.5

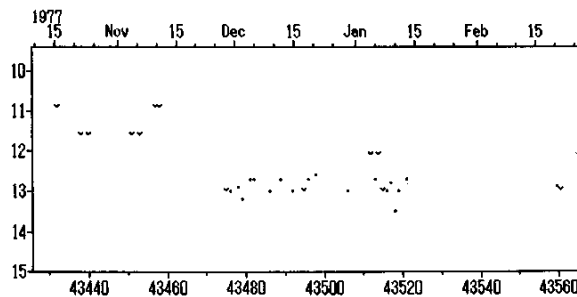


Fig.6

- (5) NSV12883 = 29.1938 20h09m28s +36° 25' (1950.0)
 Discoveror suggests irregular type, having mag. range 10.4 - 11.8p.
 According Huruahata's film (37 films, Oct.15 '77 - Feb.21 '78), 11.0 - 11.7 mag.variation was estimated. Fig.7 and Fig.8 gives finding chart and light curve respectively.

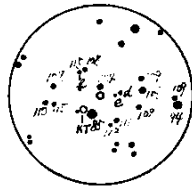


Fig.7

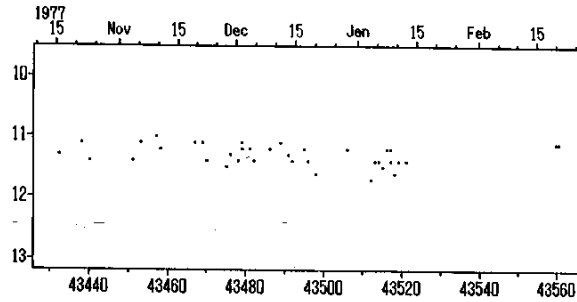


Fig.8

- (6) NSV13204 = 31.1938 20h36m59s +52° 35' .0 (1950.0)
 Discoveror suggests eclipsing var. having the following elements.
 min.=JD 2428859.2 + 28.5 E mag. 11.0 - 12.0p
 Huruahata's film (48 films, Oct.15 '77 - Nov.28 '78) shows 10.9 - 11.9 mag. variation. According to the periodgram, instead of 28.5day 6.04day is detected. The accuracy of the period of 6.04 day is not certain. Fig.9 and Fig.10 shows finding chart and light curve, respectively.

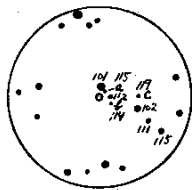


Fig.9

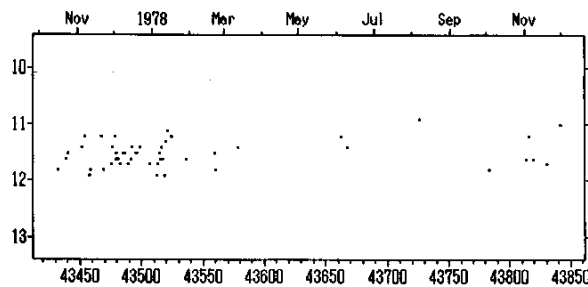


Fig.10

Reference:

- 1)K.Suzuki, M.Huruahata,1938,AN 267,101
- 2)K.Suzuki, M.Huruahata,G.Kuroiwa,1938,Tokyo Proc. Imp.Acad. 14,No.10,373
- 3)S.Sakuma, 1990,Variable Star Bull., Japan. No.12

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VARIABLE STAR OBSERVERS LEAGUE
IN JAPAN

NATIONAL SCIENCE MUSEUM
Ueno Park, Taito-ku, Tokyo 110. JAPAN

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