LIGHT VARIATIONS OF H 4 CANCRI

DIETMAR BÖHME
4851 Nessa, Nr. 11
PSF 93
German Democratic Republic

Abstract

Photographic observations from 1964 to 1977 suggest that this is a semiregular variable with a period of about 120 days and a total range of $9^m.9$ to $11^m.0$ pv. A long-period variation is also suggested.

* * * * *

This variable star was discovered by M. Huruhata (1978), who gave the following data:

$\alpha = 8^h57^m56^s$, $\delta = +8°35'.9$ (1900)

Type: SRb

Period: 45 days

The author has examined this star on the sky patrol plates of the Sonneberg Observatory, making 220 estimates of m_{pg} and 55 estimates of m_{pv}. The visual sequence provided by Huruhata was used on both types of plates, with the constant correction $m_{pg} = m_{pv} + 0^m.7$. Figure 1 is a finding chart, and Figure 2, is the photographic light curve. Adopted times of maximum (M) and minimum (m) are indicated with arrows. A mean period of 120 days was obtained from the times of maxima and minima listed in Table 1.

TABLE I

MAXIMA AND MINIMA OF H 4 CANCRI

Julian Day	Type	m_{pv}	Julian Day	Type	m_{pv}
2,438,390	min.	10.8	2,442,120	min.	10.4
2,438,460	max.	10.0	2,442,360	min.	10.9
2,438,500	min.	10.8	2,442,430	max.	10.3
2,438,780	min.	10.6	2,442,490	min.	10.7
2,438,820	max.	10.0	2,442,560	max.	10.0
2,438,880	min.	10.7	2,442,740	min.	10.7
2,438,940	max.	10.0	2,442,800	max.	9.9
2,439,070	min.	10.3	2,442,880	min.	10.5
2,439,120	max.	-	2,443,050	max.	10.1
2,439,180	min.	10.6	2,443,110	min.	10.7
2,439,230	max.	9.9	2,443,160	max.	10.4
2,439,530	min.	10.4	2,443,220	min.	10.6
2,439,580	max.	10.0	2,443,300	max.	10.0

The activity of this star appears to vary and it may be summarized as follows:

Julian Day	Nature of Variation
2,438,400-2,439,500	Relatively regular variations with an amplitude of $0^m.6$ and a period of 120 days.
2,439,500-2,440,500	Irregular variation with a decreased amplitude of $0^m.2$ to $0^m.3$.
2,440,500-2,441,200	Not sufficient observational material.
2,441,200-2,441,800	Irregular, slow variation.
2,441,800-2,443,300	Variation with a mean period of 120 days.

There is a suspicion that the mean brightness varies with an amplitude of $0^m.3$, and, although the interval covered is too small to determine the period, it may be 4000 days.

The color index suggests that the star is of spectral type late-G or K, and these data confirm that it is of the type SRb with a range from $9^m.9$ to $11^m.0$.

The author wishes to thank M. Huruhata and the Director of the Sonneberg Observatory, W. Wenzel, for their help.

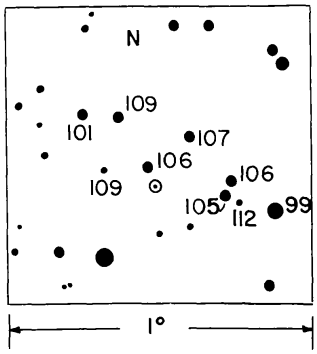

Figure 1. Finding chart for H 4 Cancri with visual magnitudes supplied by M. Huruhata shown.

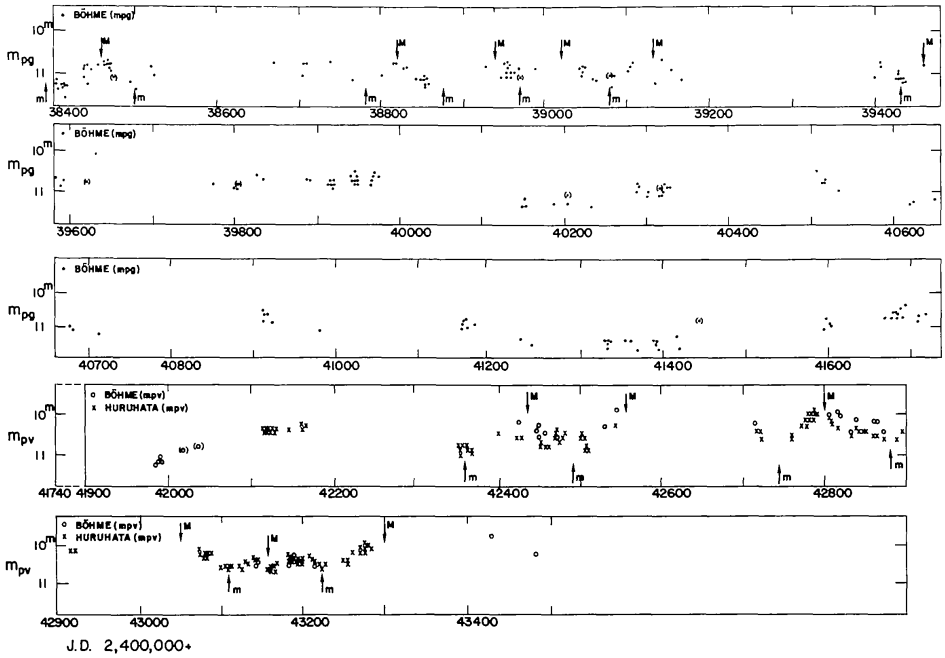

Figure 2. Photographic light curve of H 4 Cancri obtained from sky patrol plates of the Sonneberg Observatory. Times of maximum (M) and minimum (m) are indicated. Visual estimates by Huruhata (x) and photovisual estimates by the author (o) are shown.

REFERENCE

Huruhata, M. 1978, Information Bull. on Variable Stars, No. 1401.