

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS

Number 2967

Konkoly Observatory
 Budapest
 19 December 1986
 HU ISSN 0374-0676

OPTICAL BEHAVIOUR OF THE POLAR AM Her IN 1985

In linking to the sequence of comparison stars given by Hudec and Meinunger (1977) the star was measured and inspected on 131 blue-sensitive (ORWO-ZU 21 + GG13 + BG 12), 10 uv-sensitive (ORWO-ZU 21 + UG 2) and 12 photo-visual (ORWO-RP 1 + GG14) plates from 55 nights taken with the 50/70/172 cm Schmidt camera of Sonneberg Observatory covering the time interval between 11 February and 27 October 1986. The individual observations will be published in MVS, Sonneberg. On 44 nights more than one plate per night was obtained.

Table I

J.D.hel. 244 ...	U - B	B-V	B
6645.392	-0.37::		13 ^m .91::
6645.427	-1.57		15.11
6645.440		0.51	15.11
6646.396		0.73	14.17
6646.439	-0.83		14.42
6648.396		-0.01	14.50
6648.410	-1.10		14.50
6648.439	-0.86		14.26
6649.388		0.93	14.48
6649.410	-0.86		14.48
6649.432	-1.00		14.34
6650.392		0.35	14.14
6650.411	-1.22		14.14
6650.430	-1.70		14.62
6651.399		-0.05	14.02
6651.420	-0.76		14.02
6651.443	-0.66		13.92
6679.330	-1.36		14.96
6679.351	-0.98		14.58
6679.371		0.59	14.58
6679.393		0.14	14.13
6683.337	-0.92		14.30
6683.358	-0.65		14.03
6683.379		0.05	14.03
6705.303	-0.96		13.76
6705.347		0.76	14.02
6709.298	-1.16		13.71
6709.308		0.69	13.71
6713.308		0.09	13.89

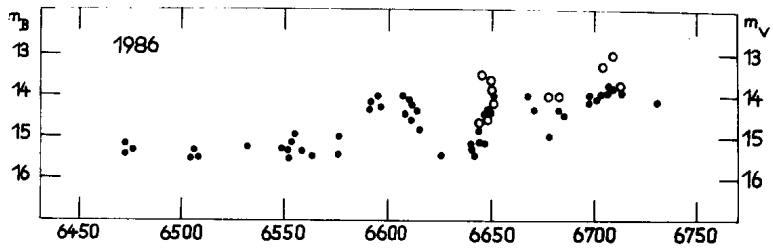


Figure 1

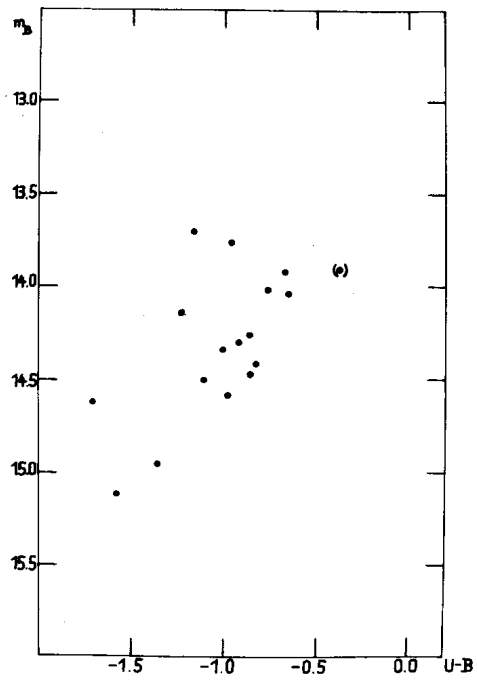


Figure 2

The long-time light curve in B and V (open circles) is given in Figure 1, As in the series of other years (see Götz, 1986) two different states of brightness behaviour of AM Her can be seen there.

The low state is characterized by a long-lasting minimum of 104^d at the beginning of the series. Considering the light curve obtained in 1985 (Götz, 1986) the given minimum is probably the continuation of the 120^d low state at the end of the mentioned series. Assuming this case the total duration of the low state crossing the season 1985/86 amounts to about 290^d . The light curve in Figure 1 shows also a minimum of about 20^d and a short decrease to $\bar{B} \approx 15.0^m$ within 10^d .

The observations of the high state which is caused by X-ray heating are in the mean brightness $\bar{B} \approx 14.0^m$.

The colour indices B-V and U-B of the star obtained on 11 nights are listed in Table I. The B-V colour indices complete the colour-magnitude diagram (m_B - (B-V)) given by Götz (1984) and are in agreement with the behaviour shown there. The colour-magnitude diagram m_B - (U-B) is given in Figure 2. There, with increasing brightness the colour indices become larger.

The occultation light changes from the high and low state observations superimposed on the long-time behaviour of the star are in agreement with the improved elements and the occultation light curves given by Götz (1984).

W. GÖTZ

Zentralinstitut für Astrophysik der
Akademie der Wissenschaften der DDR
Sternwarte Sonneberg

References:

- Götz, W., 1984, IBVS, No. 2649.
Götz, W., 1986, IBVS, No. 2851.
Hudec, R., Meinunger, L., 1977, MVS 7, 194.