The variable star SY Muscae, by *J. Uitterdijk.*

The variability of this star was discovered by Miss CANNON (*H.C.* 184). It is H D. 100336 and does not occur in the C.P.D. The spectrum is very peculiar, the following description is given in the Draper Catalogue:

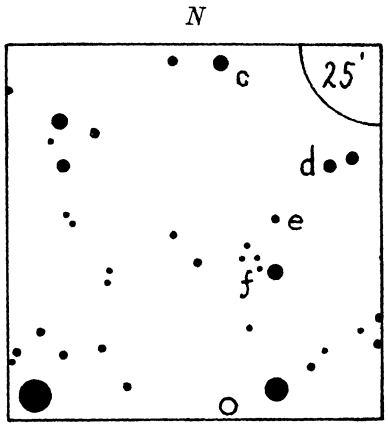
" .... Four bright lines are seen, three of which are $H\beta$, $H\gamma$, and $H\delta$ and the fourth appears to be the band 4650, present in spectra of Class *O*. The spectrum resembles that of *Z* Andromedae and also several new stars at late stages of their history. (The lightcurve of *Z* Andromedae, given in *HC* 168 resembles that of new stars in having sudden outbursts in light) ...."

I estimated the star together with *AY* Muscae (*B.A.N.* 240. *e*) between the same comparison stars *a*, *b*, *c*, *d*, *e* and *f* (see Fig. 3; *AY* Muscae is the bright star preceeding *f*). The variable *SY* Muscae being always fainter than *c*, I now arbitrarily choose the step value of *c* to be zero. The magnitudes of the comparison stars were determined by means of the Harvard Sequence of the Selected Area 193, which is in the field of the plates used. They are given here, together with the step values, derived from the estimates themselves.

	m	st
c	10·7	·00
d	11·3	3·47
e	11·9	6·41
f	12·5	10·28

Together with eight estimates on plates taken before 1924 the 400 observations cover an interval of 22 years (see Table 2). In this interval the brightness

FIGURE 3.



of the variable is always only slowly altering and no sudden outbursts in light like in the case of *Z* Andromedae have been found. A periodical change of 625 days satisfies all observations very well. There is no indication of irregularity in the length of the period or in the form of the lightcurve of the different periods, except perhaps in one case, viz. the minimum reached in the year 1924 when the variable seems to be somewhat too bright.

TABLE 2.

number of observations	limiting J.D.	mean J.D.	mean brightness	number of observations	limiting J.D.	mean J.D.	mean brightness	number of observations	limiting J.D.	mean J.D.	mean brightness
	d d	d	st		d d	d	st		d d	d	st
2	2418794—8799	2418797	6·7	39	2424281—4291	2424288·3	3·39	4	2425452—5453	2425452·8	4·03
1	8834	8834·3	7·7	30	4292—4298	4294·8	3·37	2	5615	5615·5	5·4
1	2421287	2421287·3	4·9	6	4559—4566	4560·8	8.10	11	5702—5714	5710·0	7·81
1	1401	1401·2	8·3	2	4586	4586·5	7·05	4	5807—5816	5809·5	9·03
1	2084	2084·3	8·6	2	4918	4918·5	3·8	8	5830—5836	5833·4	8·11
1	3550	3550·3	4·9	1	5025	5025·4	6·4	9	6007—6013	6011·1	3·88
5	3788—3801	3794·3	7·18	1	5206	5206·5	7·5	5	6029—6031	6030·2	3·10
6	3883—3887	3885·2	8·03	30	5328—5337	5331·0	5·39	13	6087—6096	6094·7	3·82
2	3904—3916	3910·4	8·0	22	5348—5354	5352·5	4·80	12	6113—6121	6117·8	3·60
11	3930—3946	3940·4	8·11	16	5355—5362	5359·7	4·78	12	6122—6129	6125·2	3·26
17	3958—3977	3968·9	7·49	21	5378—5386	5383·0	3·49	3	6439—6452	6447·9	8·9
10	3985—3990	3988·1	6·94	15	5388—5393	5392·3	3·15	17	6469—6480	6474·9	8·15
10	3991—4000	3995·3	6·33	9	5414—5420	5417·0	3·73	1	6891	6891·2	6·4
34	4258—4264	4260·9	3·49	3	5435—5441	5437·3	3·2	3	6924—6926	6924·9	7·73

Accordingly a mean lightcurve has been constructed, using the reciprocal period $^{d-1}$·0016 and taking J.D. 2420000 as zeropoint (Table 3). This lightcurve given in Fig. 4 is remarkable. There are two maxima of equal height which are separated by a secondary minimum of relatively short duration. There is some