

British Astronomical Association

VARIABLE STAR SECTION

CIRCULAR 1.

Deurne, Antwerp, Belgium, 1922 March 31.
23, rue Thisius.

(1) The new Director begs to present his compliments to all the members of the Section. He intends to publish from time to time a circular dealing with various aspects of our work which are of a technical nature, and therefore unsuitable for reproduction in the limited space available in the *Journal*.

He begs to refer to the April number of the *Journal*, which will contain a general statement dealing with his nomination, with the able work of his two distinguished predecessors, with the Sectional programme, which he does not intend to modify for the present, and giving some hints as to the future.

He hopes that all will take the greatest possible interest in our common work, which can only be satisfactorily performed with the active assistance and the goodwill of each individual member.

(2) **WORKING LIST OF VARIABLE STARS.** — With the addition, at Mr. C. L. BROOK's request, of **R Persei**, the Working List of the Section now contains the following 54 stars :

A. — **SS Cygni.**

B. — 21 Long Periods, $P < 300$ days :

* S Aquilæ	R Camelo.	* RY Ophiuchi
* R Arietis	* X »	* X Pegasi
* X Aurigæ	W Coronæ	R Persei
R Boötis	* W Cygni	* V Tauri
S »	R Draconis	S Ursæ Majoris
* U »	* T Herculis	T »
V »	* W Lyræ	* R Vulpeculæ

C. — 27 Long Periods, P > 300 days :

1 R Andromedæ	12 0 (Mira) Ceti	21 R Hydræ
2 W " "	13 S Coronæ	22 R Leonis
3 R Aquilæ	15 S Cygni	23 R Lyncis
4 R Aurigæ	14 R " "	24 U Orionis
5 V Camelo.	16 U " "	25 R Pegasi
6 R Cassiopeiæ	17 V " "	26 R Serpentis
8 T " "	19 S Herculis	27 R Ursæ Majoris
2 W " "	20 U " "	28 S Ursæ Minoris
11 T Cephei	18 R Geminorum	29 S Virginis

7 S Cass
10 S Cephei

D. — 3 " Irregulars » :

R Coronæ U Geminorum R Scuti

E. — Novæ (not included in the " regular " programme). For the present **Nova Aquilæ**, N° 3 (1918), and **Nova Cygni**, N° 3 (1920), are observed.

This classification is of course somewhat arbitrary, and merely indicates the order in which it is proposed to deal with the stars in the Reports. The number of Long Periods being somewhat large, it has been thought best to divide them into two groups, each to be discussed in a separate Report.

For it to be possible to produce accurate light-curves, which are one of the features of the Section, the stars having periods under 300 days, and especially those under 200 days (marked *), should be observed somewhat oftener than the others.

Our list of Long Period Variables now includes most of the 22 Rousdon stars, those not contained in it being :

S Cassiopeiæ S Cygni S Persei
S Cephei T Draconis R Ursæ Minoris

Although it is not intended to add them to our Working List at present, some of the more enterprising members might well take them up. Prof. A.A. NILJLAND has been observing **S Cassiopeiæ**, **S Cephei** and **S Persei** for many years, and has recently published an interesting note about **S Cephei**, showing that the mean magnitude of this star is fluctuating in a period of about 3200 days ; and the Director is trying to observe, though not as continuously as he would wish, **S Persei** and **R Ursæ Minoris**, the latter being probably irregular.

A (Hagen) chart and a list of comparison stars for **R Persei**, kindly prepared by Mr. C. L. BROOK, will be sent to members desirous of observing this star. Charts for this and other stars on our list may be had on request addressed to Mr. A. N. BROWN, Ludgrove, New Barnet, Herts.

(3) SENDING IN OBSERVATIONS. — Will members kindly send in their later observations for each year, so that they may reach the addresses in England or Antwerp at the latest as follows :

- A. — SS Cygni by January 31.
- B. — Long Periods < 300^d February 28.
- C. — “ > 300^d March 31.
- D. — Irregulars April 30.
- E. — Novæ May 31.

It would greatly facilitate the work of reduction and compilation entrusted to the Director, if members could send in their work, say up to July 31, during the long vacation, and the *remainder* by the above dates. Observations of members within the British Empire reaching England between Aug. 1 and Sept. 15, should be addressed to the Country address of Mr. A. N. BROWN, Brackenhurst, Bucklebury Common, Reading.

(4) RECORDING OBSERVATIONS. — For obvious reasons, it is requested that all the observations should be written, if possible, on the regular forms used by the Section, as supplied on application by Mr. A. N. BROWN (please state approximate number required). If this is impossible, they should be recorded on forms of the same size (10 1/2 by 8 inches), ruled in the same way, one side only being used.

Attention is called to the convenience of adhering to Astronomical Greenwich Time (Midday = 0^h, Midnight = 12^h), and to the necessity of indicating for each observation the state of the sky (1 to 3, 1 best), the “ Class ” (1 to 3, 1 best) and (in the “ Remarks ” column), any circumstance or hindrance having a possible bearing on the estimate : moonlight and twilight (slight or strong), clouds, haze, wind, aurora, low altitude, hurry, artificial light, possible doubt.

It would be well if all observers would use the classical TURNER method of recording “ step ” estimates :

$$3 - 5, \quad = 4, \quad 5 + 4$$

and the “ fractional ” estimates, according to MARKWICK, as follows :

$$3 (2) \vee (2) 5$$

The latter method is especially useful when the only comparison stars available differ greatly in magnitude, and may in that case often be used with advantage in conjunction with a “ step ” estimate. For example :

$$1 (9) \vee (1) 2; 2 + 2.$$

(5) MAGNITUDE SCALE. — I may in the future request members to send me a short statement as to their present instruments and location, and their usual method of observing variables, especially as regards the following points :

(A) Whether they are using the *true* step (Herschel-Argelander) method, i. e., physiological steps, the step being defined as the smallest difference of magnitude conveniently perceptible,— without any previous knowledge of the true difference (in tenths of a magnitude) between the comparison stars used ;

(B) Or whether they are using a less rigorous method, i. e., whether they try to "accommodate" their "step" to the tenth of a magnitude, by looking up in the list or on the chart, the true difference, in tenths, between the comparison stars used.

The first method is to be preferred, because it is thought its use would facilitate an investigation into the various causes which may influence the estimates.

(6) PROPOSED SECTIONAL MEETING. — It is proposed to hold a Meeting of the Section at Sion College, Victoria Embankment, London (near Blackfriars Bridge), before the May 30 or June 28 meeting of the B. A. A.

Members proposing to attend are cordially invited to state which of these dates would suit them best, and whether they would be able to also attend eventually a morning meeting on the same day. It is hoped that a large number may be able to be present on this occasion.

The following points form the outline of the agenda, time permitting :

1. General policy of the Section.
2. Stars to be observed.
3. Possibility of allotting some of the stars to different groups of observers.
4. Need for all the regular observers to observe certain identical stars; number and choice of these "common" stars.
5. Suggestions as to charts, lists, etc.
6. Possibility of making colour observations and of adopting some numerical (white-yellow-red) colour-scale.
7. Is it desirable to "reduce" fractional observations to the step form merely for the sake of uniformity in publication?
8. Observation of red stars. Long or short gaze.
9. Means of attracting new members and especially of getting more Southern observers.
10. Proposal for forming a Nova Section.

Members, especially those not able to attend, are urged to communicate their views on these points, or on others which may occur to them, to the Director. They will be summarised in a Circular to be sent out some time before the meeting, in order to form a suitable basis for the discussion.

(7) PRESENTATION. — Some of our members have expressed a wish that, in addition to the expression of appreciation and gratitude to Mr. C. L. BROOK published in the *Journal*, some souvenir of permanent value should be presented to him, either a printed address suitably bound, or a memento similar to that presented to Col. E. E. MARKWICK on 1910 June 29 (Vide BROOK's Circulars I and II).

Will members frankly express their views regarding this proposal?

FELIX DE ROY
Director.