

NOTES.

1898 Sept. 19th, Asteroid faint in haze; wind shook telescope. — 22d, Asteroid faint in haze and moonlight. — 26th, Asteroid scarcely visible; moon near. — 29th, Asteroid connected by micrometric measures with a faint star near by, which was afterward connected with *26. — Oct. 24th, Asteroid difficult in moonlight and bad seeing. — 25th, The observations of the third set are poor. — Nov. 3d, Asteroid hard to see in haze; at 6^h 34^m M.T. it coincided so nearly with a 12.5 mag. star, that they seemed to be one. — 4th, Bad seeing. — Dec. 5th, Poor seeing. — 17th, Observations difficult from haze and moonlight. — 1899 Jan. 6th, The declination measures of the third set disagree very badly. — 7th, The third set of observations is poor, because of haze. — 20th, Asteroid very faint in haze and moonlight

during the third set. — 23d, Wind shook the telescope during the third set. — Feb. 1st, Very bad seeing. — 9th, Poor seeing. — 16th, Much difficulty from clouds and moonlight. — 23d, Asteroid very hard to see; bad definition. — Mar. 1st, Asteroid extremely faint through a cloud, during the first set. — 11th, Asteroid faint in a cloud during the first two sets. — 14th, Bad seeing; windy; moon within three degrees of the planet. — 15th, The $\Delta\delta$ observations of the first set were made with the driving clock running. — 23d, Observations quite difficult in haze and moonlight. — 28th, The $\Delta\delta$ observations of the first set were made with the driving clock running. — Apr. 6th, Poor seeing throughout the evening.

REMARKS ON MR. MOULTON'S PAPER IN *A.J.* 461,

BY T. J. J. SEE.

In the interesting application which Mr. MOULTON has made of the criteria of stability to the irregularity in the system of F. 70 *Ophiuchi*, he speaks as if his results rendered the hypothesis of a perturbation improbable. Those who will examine my original papers in *A.J.* 358, 363, will see that I foresaw from the first the difficulty of securing stability, and that while I assigned the unseen body to the companion, partly because it seemed unwise to introduce prolix hypotheses when many still disputed the *fact* of a perturbation, and partly because with the graphical method employed the perturbation would be more obvious if assigned to the small star, I never entertained any very decided view as to which star the dark body attended. Under (9) *A.J.* 363, I remarked: "While we have spoken of the dark body as attending the companion, it is clear that similar phenomena would result from the action of a body revolving round the central star." And in the volume on *orbits*, which appeared shortly afterwards, I had so far reached the conclusion that the large star is perturbed, that I gave the place of the dark body referred to that star. In the recent examinations of this system made in Arizona I always assumed that the dark body attends the central star, and on several occasions suspected an obscure satellite in position-angle 160°, but could never confirm the suspicion even under those fine conditions.

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U.S. Naval Observatory, Washington, D.C., 1899 May 18.

NOTE. — The remainder of Dr. SEE's communication is omitted, partly because it has no pertinent bearing on Mr. MOULTON's paper. To abbreviate most effectively unfruitful discussion, Dr. SEE's remarks were transmitted to Mr. MOULTON to afford him opportunity, if he desired, to reply; but he declines, on perfectly correct and dignified grounds, to do so; his essential and sufficient reason being that the statements are not in accordance with the facts.

Here the matter might be dropped were it not desirable to direct the attention of those who care to consider the matter further, to the remainder of Dr. SEE's paragraph in *A.J.* 363, of which he here quotes only four lines; and also to the fact that his book of computations of orbits of double stars merely reproduces, without addition or subtraction of a word or line, his article in *A.J.* 363. It therefore affords no evidence of change of view or modification of hypothesis.

The present is as fitting an opportunity as any to observe that heretofore Dr. SEE has been permitted, in the presentation of his views in this journal, the widest latitude that even a forced interpretation of the rules of catholicity would allow; but that hereafter he must not be surprised if these rules, whether as to soundness, pertinency, discreetness or propriety, are construed within what may appear to him unduly restricted limits.

ED.

CORRIGENDA.

No. 456, line 9, column δ , for 32^h.7 put 39^h.9." " " 11, " a, for 58^h.26 put 59^h.59." " " 15, " δ , for 14^h.4 put 17^h.7.

No. 459, in column "Authority" for stars 3, 4 and 5, for Rogers put Graham. (This error was the Editor's, not the contributor's.)

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