and during that period I have several times beheld an eclipse of the moon, but never before did my eyes behold the moon positively giving *good* light from its disk during a total eclipse. The phases of the moon perfectly corresponded with the authorised diagram up to the period of $8^h\ 40^m$ and after $9^h\ 40^m$ to the end of the eclipse."

Occultations of Fixed Stars observed by Mr. Rümker, Hamburg.

	B.A.C.		Hamburg M.T. h m s	
1847. Feb. 25	2486	68 Gemin. *k*	10 27 55·3	Immersion
March 22	1692	115 Tauri	7 22 12·0	—
May 28	5112	35 Libræ ζ^4	10 2 38·8	—
June 22	4521	76 Virginis	8 57 54·6	—
Oct. 26	1526	Tauri	9 25 51·0	Emersion
1848. Jan. 26	1420	87 Tauri *α*	5 16 20·8	—
	By M. G. Rümker		21·5	—

(The nomenclature of the stars has been altered to make it agree with that of the British Association Catalogue.)

Occultations observed at Poona, by W. S. Jacob, Esq.

Lat. 18° 31′ 36″, N.; Approx. Long. $4^h\ 55^m\ 42^s$ E.

1847.

Dec. 13. Occultation of *θ Aquarii*, Poona Sidereal Time.

Immer. $1^h\ 38^m\ 11^s{\cdot}5$ instantaneous; Emer. $2^h\ 45^m\ 37^s{\cdot}0$ instantaneous.

Dec. 16. Occultation of *Saturn*, Poona Sideral Time.

Immer. $3^h\ 40^m\ 7^s{\cdot}2$ *i.e.* total disappearance; Emer. $4^h\ 51^m\ 35^s{\cdot}5$

The planet was not visible at emersion until it was about 2″ separated from the moon's limb, or about 4^s after true emersion: 4^s must, therefore, be substracted from the emersion stated. Planet very dim.

Extract of a Letter from Mr. Maclear.* *(Cape of Good Hope.)*

"I have observed all the stars which Professor Mädler wished me to observe except one which is now coming into visibility. The reductions are proceeding.

"I have got the 46-inch achromatic on the polar axis, and am proceeding with the adjustments. . . . . The dome may be turned with the little finger. There is a little too much side-play, for our violent winds keep it in constant oscillation; but this can easily be checked, and on the whole I am very well satisfied. The practical knowledge I have acquired will, I trust, be useful when the large equatoreal (which is daily expected) arrives. . . . .

"Observations have been commenced, or rather resumed, of the

* See the last *Annual Report*, p. 87.

following list of stars for the detection of annual parallax. *β Hydri, α Phœnicis, α Eridani, α Columbæ, η Argûs, δ,* α^1 and α^2, *γ* and *β Crucis, ε, β,* α^1 and α^2 *Centauri, α Circini,* B. A. C. 5233, *β, α Trianguli, α Gruis.*"

Observations of α Centauri and other Double Stars made at Poona. By W. S. Jacob, Esq., late Capt. Bengal Engineers.

These consist of several measures of *α Centauri* extending over nearly three years, during which time the angle of position has increased 8°, and the distance diminished 3″. There are observations of 6 other stars, some of which are deemed to be *probably* revolving. The author has appended elements of the orbit of *α Centauri*, a star which is known to have a very sensible parallax.

On the Annual Oscillations of the Level and Azimuthal Errors of the Greenwich and Cambridge Transit Instruments. By Mr. Henry, of the Royal Observatory, Greenwich.

On comparing the level errors of the Greenwich and Cambridge transits for every month through several years, Mr. Henry finds that there is in each instrument an annual variation of considerable regularity. The western pivot, in spring, is always higher relatively to the eastern pivot than at any other season, and lower in autumn. This maximum and minimum coincides pretty nearly with the months of March and September. As the Y adjustments of the Greenwich instrument have not been touched for eleven years (it is believed those of Cambridge have been almost as little disturbed), a tabular statement of the mean level errors for the months of March and September, during the last few years, will shew this variation very distinctly: each level error is the mean of four weekly observations: the sign + signifies that the west end is higher than the east, and — the contrary.

Transit Level Errors.

	GREENWICH.				CAMBRIDGE.		
Years.	March.	Sept.	Annl. Varn.		March.	Sept.	Annl. Varn.
	″	″	″		″	″	″
1836	+2·88	−0·28	3·16	1833	−0·86	−3·30	2·44
7	0·54	0·93	1·47	5	+2·11	1·96	4·07
8	2·32	0·18	2·50	7	−3·14	3·71	0·57
9	1·08	0·61	1·69	8	−3·23	−6·97	3·74
1840	1·64	0·49	2·13	9	+4·10	+1·78	2·32
1	2·21	0·54	2·75	1840	2·62	+1·68	0·94
2	3·03	−0·16	3·19	1	+0·49	−3·12	3·61
3	2·42	+0·93	1·49	1842	−3·18	−5·35	2·17
4	3·78	−0·16	3·94				
1845	+2·76	−0·39	3·15				
			Mean 2·55				Mean 2·48