The power used was 316 and the aperture 22 inches. At the immersion the moon's edge was remarkably sharp, black, and smooth, while the planet, though sharp, quivered greatly about the middle of the immersion, which occupied about 51 seconds. The immersion was very oblique to the transverse axis of the ring, while at the emersion the planet protruded the end of its ring almost in the direction of a radius of the moon. At the emersion the planet was very steady and the moon's limb disturbed — a remarkable contrast to the phenomena of the immersion.

The colour of *Saturn* on emerging was certainly pale and of a greenish hue, in comparison with the moon's lustre and colour; yet, calling to mind the late occultation of *Jupiter*, it was not so pale and dull as I expected.

The time occupied by emersion was somewhere about 80 seconds, but I did not think it important to notice very exactly the times of the phenomena, my attention being engaged in closely watching for any remarkable appearance which might present itself. Nothing, however, did present itself worthy of remark; the planet underwent no distortion nor apparent alteration whatever during either transit across the moon's limb.

Right Ascension and North Polar Distance of the Minor Planets, from Observations made at the Madras Observatory in the Years 1853–1857. By Captain W. S. Jacob, late Director of the Madras Observatory.

⑤ *Astræa.*

	Mean Solar Time of Observation.	R.A. from Observation.	N.P.D. from Observation.
1853.	h m s	h m s	° ′ ″
Dec. 12	8 20 0·9	1 44 54·20	86 57 43·38
19	7 51 39·4	1 44 3·81	86 44 21·97
1856.			
Aug. 7	10 45 39·8	19 51 19·21	
22	9 36 34·7	19 41 11·46	

⑥ *Hebe.*

1857.			
Feb. 14	12 8 44·4	9 47 40·26	74 0 30·52
Mar. 2	....	....	71 34 11·67
3	10 47 14·8	9 32 58·59	71 27 59·35
	10 47 53·0	9 33 36·82	
5	10 38 53·8	9 32 29·29	
6	10 33 18·0	9 30 49·12	71 3 45·58
16	9 48 15·9	9 25 5·44	
19	....	....	69 47 16·45

⑦ *Iris.*

	Mean Solar Time of Observation.	R.A. from Observation.	N.P.D. from Observation.
1854.	h m s	h m s	° ′ ″
Aug. 7	7 49 40·0	16 52 53·00	110 43 27·45
1856.			
Jan. 5	....	....	69 15 47·34
7	10 25 9·0	5 30 58·51	69 23 11·16
8	10 22 36·4	5 32 22·30	69 26 41·21
9	10 16 59·6	5 30 40·34	69 30 9·51
	10 18 46·1	5 32 27·20	
11	....	....	69 36 49·80
Feb. 12	8 2 42·5	5 30 5·26	70 31 17·84

⑧ *Flora.*

1853.			
Oct. 12	....	....	114 38 25·06
13	6 51 42·4	20 19 47·52	

⑨ *Metis.*

1853.			
Oct. 11	11 46 46·0	1 7 47·48	91 31 12·25
12	11 41 52·1	1 6 48·49	91 34 50·88
13	11 36 58·2	1 5 50·25	91 38 16·92
14	11 32 4·0	1 4 51·91	91 41 38·41
15	11 27 10·3	1 3 53·97	91 44 53·77
25	10 38 43·0	0 54 44·59	92 8 10·95
27	10 29 12·5	0 53 4·71	92 10 37·74
Nov. 15	9 3 51·6	0 42 24·26	
16	8 59 39·7	0 42 8·37	91 48 50·35
17	8 55 29·5	0 41 54·24	91 45 30·45
18	8 51 21·2	0 41 41·54	91 42 58·75
22	8 35 7·3	0 41 11·65	91 25 51·95
23	8 31 8·9	0 41 9·11	91 17 11·51
24	8 27 11·8	0 41 7·80	91 16 48·46
26	8 19 24·9	0 41 12·36	
30	8 4 11·0	0 41 42·69	90 44 57·77
Dec. 2	....	....	90 32 15·67
1856.			
Aug. 7	9 39 4·6	18 44 33·12	119 4 8·25
	9 39 55·0	18 45 23·64	
8	9 33 22·2	18 42 46·31	

⑩ *Hygeia.*

1856.			
Aug. 22	11 26 32·5	21 31 27·33	101 17 2·97
	11 26 57·4	21 31 52·31	

⑪ *Parthenope.*

	Mean Solar Time of Observation.	R.A. from Observation.	N.P.D. from Observation.
1854.	h m s	h m s	° ′ ″
July 21	8 27 2·1	16 23 15·21	107 23 19·25
1855.			
Nov. 19	11 16 35·5	3 9 22·58	79 57 23·18
21	11 6 50·9	3 7 29·06	80 2 41·27
1856.			
Jan. 3	7 58 11·5	2 47 40·51	79 37 38·48
5	....	....	79 27 40·73
8	....	....	79 14 58·86
17	7 8 14·5	2 52 57·80	
18	7 5 5·4	2 53 44·63	78 29 45·76
1857.			
Mar. 4	11 32 11·3	10 21 58·98	
16	10 35 4·4	10 12 1·64	
	10 35 5·8	10 12 3·04	
17	10 30 28·2	10 11 21·25	74 37 0·86
19	10 21 14·9	10 9 59·53	
April16	8 21 44·4	10 0 32·57	

⑫ *Victoria.*

1854.			
Dec. 6	11 2 8·6	4 2 51·95	71 59 57·26
7	10 57 40·7	4 2 19·28	71 59 43·76
1857.			
Oct. 8	8 12 33·5	21 21 17·65	

⑬ *Egeria.*

1854.			
Oct. 24	10 58 6·6	1 9 17·31	
1856.			
Mar. 17	10 41 5·9	10 22 56·90	54 16 35·45
	10 42 26·1	10 24 17·38	
April 2	9 29 49·4	10 14 33·85	

⑭ *Irene.*

1853.			
Dec. 1	11 27 12·6	4 9 14·60	74 18 29·56
	11 27 57·2	4 9 59·40	
3	11 16 58·6	4 6 51·93	74 17 23·75
	11 17 16·3	4 7 9·66	
6	11 1 45·1	4 3 24·85	74 16 8·00
	11 2 25·1	4 4 4·95	

⑮ *Eunomia.*

1854.			
Mar. 21	11 33 43·7	11 29 27·39	103 51 40·26
April 1	10 41 22·4	11 20 19·39	102 59 54·86
7	10 13 30·2	11 16 2·18	102 24 45·28
8	10 8 55·1	11 15 23·05	

⑯ *Psyche.*

	Mean Solar Time of Observation.	R.A. from Observation	N.P.D. from Observation.
1854.	h m s	h m s	° ′ ″
July 27	11 45 31·6	20 5 56·05	107 53 49·40
1856.			
Jan. 3	8 49 39·3	3 39 16·77	74 42 33·80
4	8 46 42·3	3 40 26·22	74 41 40·55
	8 47 23·1	3 41 7·10	
5	8 43 18·7	3 40 58·47	74 40 28·87
7	8 35 13·6	3 40 45·06	74 38 4·42
8	8 31 13·9	3 40 41·54	74 36 36·94
9	....	....	74 35 22·94
10	....	....	74 33 46·30
24	7 30 44·3	3 43 6·66	74 2 37·39
25	....	....	74 0 8·46
28	7 16 37·4	3 44 43·83	73 51 0·36
1857.			
Mar. 2	11 24 2·5	10 5 55·83	78 6 34·61
4	11 16 1·4	10 5 46·42	

⑰ *Thetis.*

1853.			
Oct. 11	9 41 7·9	23 1 47·71	103 24 38·73
15	9 22 55·2	22 59 18·43	103 30 58·02

⑱ *Melpomene.*

1856.			
Oct. 31	11 47 28·9	2 28 26·24	

⑲ *Fortuna.*

1854.			
Mar. 10	10 6 9·3	9 18 16·90	76 28 34·56

⑳ *Massilia.*

1854.			
April 1	10 55 37·4	11 34 36·70	87 56 33·84
	10 56 25·2	11 35 24·64	
7	10 28 39·6	11 31 13·99	87 24 12·86
	10 29 25·0	11 31 59·61	
1856.			
Nov. 1	11 54 18·2	2 39 13·08	74 47 41·89

㉑ *Lutetia.*

1854.			
Mar. 22	9 38 35·8	9 37 57·18	71 26 24·19
23	9 34 39·9	9 37 57·05	71 26 24·45
24	9 30 43·8	9 37 56·93	71 26 24·45

(21) *Lutetia (continued.)*

	Mean Solar Time of Observation.	R.A. from Observation.	N.P.D from Observation.
1857.	h m s	h m s	° ′ ″
Jan. 20	8 10 24·1	4 10 6·79	68 44 58·79
21	8 6 28·4	4 10 6·98	68 44 57·02
23	7 58 59·1	4 10 29·50	68 37 53·52
24	7 55 3·4	4 10 29·69	
Feb. 9	6 56 37·9	4 14 59·68	
	6 57 2·6	4 15 24·46	

(22) *Calliope.*

1854.			
April 6	11 1 13·0	11 59 56·40	
1856.			
Sept. 10	11 0 53·5	22 20 37·66	122 14 13·60

(23) *Thalia.*

1854.			
July 8	7 42 16·7	14 47 6·26	104 44 42·73
	7 42 40·5	14 47 30·15	

(25) *Phocea.*

1856.			
Feb. 13	11 48 37·7	9 20 33·70	
Mar. 1	10 27 2·4	9 5 46·98	
4	10 13 57·8	9 4 29·43	102 59 7·79
5	10 10 48·5	9 5 15·78	102 49 13·28
	10 10 53·3	9 5 20·55	
6	10 5 49·3	9 4 12·81	
	10 6 1·6	9 4 25·17	
7	10 0 6·3	9 2 25·23	102 31 4·55
	10 0 8·7	9 2 27·64	
15	9 24 20·9	8 58 6·62	101 16 10·40
1857.			
Oct. 8	6 30 4·4	19 38 31·70	84 28 13·76
	6 30 27·3	19 38 54·62	

(26) *Proserpine.*

1854.			
Sept. 19	10 43 30·5	21 36 39·13	
Oct. 7	9 24 25·7	22 28 19·58	
1857.			
Mar. 16	11 49 47·2	11 26 56·71	
17	11 45 5·7	11 26 11·00	
	11 45 30·2	11 26 35·59	
19	11 35 53·8	11 24 50·73	

(27) *Euterpe.*

	Mean Solar Time of Observation.	R.A. from Observation.	N.P.D. from Observation.
1856.	h m s	h m s	° ′ ″
Aug. 22	11 15 26·7	21 20 19·70	
	11 15 44·5	21 20 37·58	107 35 3·57
	11 16 43·3	21 21 36·48	

(29) *Amphitrite.*

1857.			
Jan. 20	7 31 12·4	3 30 48·67	
21	7 26 58·1	3 30 30·19	
23	7 20 28·7	3 31 52·74	

(30) *Urania.*

1856.			
Feb. 13	10 49 3·9	8 20 50·14	
14	10 44 17·0	8 19 59·12	70 38 37·13
15	10 39 31·1	8 19 8·91	70 37 38·46
16	....	....	70 35 46·22

(31) *Euphrosyne.*

1856.			
Mar. 17	10 38 25·1	10 20 15·74	44 8 9·06

(32) *Pomona.*

1856.			
Mar. 4	10 41 19·8	9 31 55·98	84 16 3·13
5	10 36 33·2	9 31 4·65	84 4 39·20
7	10 28 40·1	9 31 3·73	
	10 28 50·9	9 31 14·57	
1857.			
July 23	10 33 12·8	18 38 44·84	
Aug. 4	9 38 20·1	18 31 2·00	

(33) *Polyhymnia.*

1856.			
Feb. 11	11 14 36·7	8 38 33·93	
12	11 8 54·0	8 36 47·25	69 5 5·07
	11 9 18·6	8 37 11·93	
1857.			
Mar. 19	11 48 43·8	11 37 42·82	86 51 17·58

(36) *Atalanta.*

1857.	Mean Solar Time of Observation. h m s	R.A. from Observation. h m s	N.P.D. from Observation. ° ′ ″
Mar. 17	11 13 35·6	10 54 35·70	
19	11 3 12·2	10 52 3·70	
24	10 39 42·4	10 48 13·21	
25	10 35 7·0	10 47 33·26	
April 16	8 55 14·5	10 34 8·26	76 22 10·56

(37) *Fides.*

1857.			
Mar. 16	11 1 2·9	10 38 4·44	
17	10 56 46·2	10 37 43·59	
26	10 17 2·3 10 17 23·8 10 17 39·5	10 33 21·90 10 33 53·53 10 33 59·17	78 55 15·18
April 16	8 47 39·4	10 26 31·83	78 51 34·19

N.B.—The north polar distances of these minor planets are reduced without the application of the horizontal parallax corrections, as they were not given in the *Nautical Almanac*.

RECENT PUBLICATIONS.

Account of the Construction of the New National Standard of Length, and of its principal Copies. By G. B. Airy, Esq., Astronomer Royal.* 4to. London, 1858.

This paper was drawn up by the author in consequence of the lamented death of his valued friend Mr. Sheepshanks, upon whom the preparation of such an account for the press would have naturally devolved. It is divided into nine Sections.

Section I. *History of the British and of some Foreign Standards, and of the Methods of using them in Base-Measures and Pendulum-Measures, anterior to the Legalisation of the Imperial Standards by the Act of Parliament of* 1824; *definition of the Standard of Length by that Act; and Provision for its Restoration in Case of Loss.* — In this section the author refers to various papers in the *Transactions of the*

* *Phil. Trans.* vol. cxlvii.