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22.

Observations of Minor planets, with the Transit Circle, at the U. S. Naval Observatory in 1875,

The following observations of the small planets were made at the U. S. Naval Observatory in 1875.

The observations are corrected for parallax, and the corrections were obtained from comparisons with the Ephemerides in the Berliner Jahrbuch, except for Niobe and Nemesis which were compared with the ephemerides in the „Circular zum Berliner Astronomischen Jahrbuch No. 26.“

In the column „Observer“

E. denotes Professor J. R. Eastman
J. „ Assistant E. Frisby
Sk. „ „ A. N. Skinner
P. „ „ H. M. Paul.

Ceres ①

Date	Observer	R.A.	Corr. to Ephem.	N.P.D.	Corr. to Ephem.
Jan. 14	Sk.	6 ^h 15 ^m 43 ^s .59	+ 8 ^s .49	60°43'36".8	— 22".9
Pallas ②					
Jan. 11	E.	2.37.16.75	— 0.95	114.10.48.7	— 1.5
14	Sk.	38.58.10	— 1.19	113.38. 1.8	— 0.8
Juno ③					
Jan. 11	E.	2.57.35.96	+ 5.70	91.41.46.6	— 7.1
15	E.	3. 1. 5.69	+ 5.68	91. 0.44.5	— 4.2
Vesta ④					
Jan. 11	E.	3.50. 9.98	+ 0.30	74.30. 6.5	— 0.7
14	Sk.	49.47.29	+ 0.25	20. 7.6	— 1.5
Astraea ⑤					
Jan. 11	E.	4.22.54.32	— 9.14	75 29.34.9	+ 38.0
Flora ⑧					
April 5	E.	13.29.39.22	+ 6.48	88.57.32.5	+ 38.8
7	F.	13 27.41.79	+ 6.76	88.44.55.7	+ 41.8
Metis ⑨					
Sept. 3	F.	0.18. 6.29	— 2.51	98.18.18.5	— 58.9*)
4	P.	17.23.51	— 2.41	98.25.26.1	+ 17.4
7	F.	15. 6.98	— 2.68	98.43. 7.6	+ 17.9
20	P.	0. 3.38.65	— 2.78	99.56.37.2	+ 17.7
27	F.	23.56.59.46	— 2.52	100.29.26.5	+ 16.1
Oct. 2	E.	52.21.47	— 2.71	100.48. 0.2	+ 17.8
5	Sk.	49.42.70	— 2.59	100.56.44.7	+ 16.4
9	F.	46.24.34	— —	101. 5.23.7	— —

*) Probably 5 revolutions wrong; if changed for that error the corr. would be + 17".7.

Hygeia ⁽¹⁰⁾

Date	Observer	R.A.	Corr. to Ephem.	N.P.D.	Corr. to Ephem.
Dec. 20	P.	7.41 58.83	— 10.16 ±	68 41. 3.4	— 178.3 ±
Victoria ⁽¹²⁾					
Sept. 24	P.	0.13.33.56	— 11.83	74.42.22.5	+ 53.8
Oct. 4	P.	5.20.01	— 11.53	76.27.58.0	+ 60.9
7	F.	—.—		77. 1.36.4	+ 61.6
9	F.	0. 1.42.95	— 11.16	77.24. 6.8	+ 59.7
12	F.	23.59.47.46	— 10.98	77.57 51.5	+ 61.7
20	P.	23.55.45.47	—.—	79 24.50 0	—.—
Egeria ⁽¹³⁾					
Oct. 28	P.	3.42.45.92	+ 0.75	67.12.38.0	— 7.5
Nov. 2	P.	37.38.20	+ 0.69	66.50. 4.5	— 7.4
5	P.	34.18.76	+ 0.64	66.37.31.3	— 7.2
8	F.	30 50.74	+ 0.67	66.25.44.1	— 8.6
11	E.	27.16.18	+ 0.67	66.14.47.7	— 8.7
12	P.	26. 3.53	+ 0.58	66.11.19.6	— 9.3
17	P.	19.56.69	+ 0.63	65.55.25.9	— 10.7
30	Sk.	3. 4.38.90	+ 0.86	65.24.17.2	— 10.0
Dec. 2	F.	3. 2 31.13	+ 0.74	65 20.33.9	— 6.2
Lutetia ⁽²¹⁾					
Nov. 12	P.	4.59.32.21	— 3.03	68.32.21.9	+ 2.1
17	P.	54.50.53	— 3.02	68.33.52.3	+ 1.6
29	P.	41.59.21	— 3.09	68.41. 0.7	+ 6.6
30	Sk.	40.52.17	— 2.99	68.41.46.0	+ 5.9
Dec. 17	E.	22.56.85	— 3.12	68.56. 0.5	+ 6.5
20	P.	20.15 90	— 3.10	68.58. 9.7	+ 5.3
Phocaea ⁽²⁵⁾					
April 5	E.	11.27.58.61	+ 4.01	105.15.25.2	+ 5.3
7	F.	11.26.33.11	+ 3.81	104.46.54.2	+ 2.3
Amphitrite ⁽²⁹⁾					
May 31	E.	16.43. 1.02	+ 1.12	121.46.24.0	+ 3.7
June 4	E.	16.38.43.66	+ 1.10	41.29.4	+ 6.3
9	F.	16.33.26.25	+ 1.13	32.36.9	+ 5.3
Pomona ⁽³²⁾					
Nov. 2	P.	3.49.46.21	— 0.57	71.40.28.3	+ 3.1
9	P.	47.13.97	— 0.53	71.54.44.7	+ 2.0
8	F.	44.34.63	— 0.58	72. 9.27.1	— 0.1
11	E.	41.50.18	— 0.39	72.24.36.3	+ 3.6
12	P.	40.54 20	— 0.58	72.29.41.5	+ 3.6
17	P.	36.11.34	— 0 52	72.55.22.2	+ 2.6
Eugenia ⁽⁴⁵⁾					
June 4	E.	17.13.15.33	—15.87	102.33.18.8	— 27.8
9	F.	8.49.76	—15.99	102.32. 3.4	— 26.0
13	F.	5.18.44	—15.81	102.32.50.2	— 24.5

Calypso (53)

Date	Observer	R.A.	Corr. to Ephem.	N.P.D.	Corr. to Ephem.
April 5	E.	12.23.41.05	— 4.53	86.13. 4.4	— 24.0
Concordia (58)					
Sept. 8	P.	0.13.55.53	— 0.57	90.45.57.5	+ 2.3
24	P.	0. 1.48.98	— 0.43	92.34. 7.8	+ 3.8
27	F.	— —	— —	92.54.13.0	+ 6.7
Oct. 2	E.	23 55.38.79	— 0.54	93.26.24.8	+ 6.9
5	Sk.	— —	— —	93.44.36.6	+ 2.3
7	F.	23.52. 2.81	— 0.01	93.56.11.1	— 2.6
Echo (60)					
Sept. 24	P.	0.56.46.96	+ 1.84	83.38.12.8	— 11.2
Oct. 4	P.	48.12.39	+ 1.87	84.52.17.7	— 8.4
5	Sk.	47.18.61	+ 1.99	85. 0. 0.1	— 12.0
7	F.	45.30.47	+ 1.98	85.15.34.4	— 11.2
9	F.	43.42.28	+ 1.83	85.31. 8.7	— 12.5
12	F.	41. 2.00	— —	85.54.26.0	— —
Niobe (71)					
Sept. 3	F.	23.21.38.69	+ 1.04	71.11.13.2	— 2.4
8	P.	16.35.47	+ 1.06	71. 9. 0.0	+ 0.3
14	P.	10.28.81	+ 1.05	71.13. 4.5	— 2.2
20	P.	4.30.33	+ 0.96	71.24. 0.6	— 1.3
24	P.	0.41.72	— —	71.34.39.0	— —
Eurydice (75)					
Sept. 3	F.	0. 4.41.80	+ 1.16	91.24.42.2	— 6.9
4	P.	4. 1.21	+ 1.10	24.11.6	— 7.2
7	F.	1.52.12	+ 0.97	23.10.4	— 7.6
8	P.	0. 1. 6.99	+ 1.01	22.58.8	— 8.1
14	P.	23.56.19.39	+ 0.94	23. 0.9	— 8.1
20	P.	51.17.60	+ 0.99	24. 5.5	— 8.0
24	P.	47.58.32	+ 0.80	24.44.8	— 7.6
Oct. 2	E.	41.53.11	+ 1.01	23.59.6	— 6.6
5	Sk.	39.54.61	+ 0.98	22.27.9	— 7.8
7	F.	38.42.87	+ 1.03	21. 0.5	— 5.8
9	P.	23.37.37.16	+ 0.81	19. 3.1	— 8.9
Freia (76)					
Dec. 17	E.	4.23.59.74	— 15.99	70.26.43.0	+ 35.1
19	Sk.	22.35.74	— —	30.25.8	— —
20	P.	21.54.76	— —	31.12.9	— —
Alcmene (82)					
April 5	E.	13.20. 1.53	+ 0.67	97.44.49.8	+ 4.2
Julia (89)					
Dec. 20	P.	6.43.44.51	— 5.77	51. 4. 5.6	— 86.7
22	F.	41. 4.25	— 5.83	10.30.0	— 87.4

Clotho (97)

Date	Observer	R.A.	Corr. to Ephem.	N.P.D.	Corr. to Ephem.
Oct. 20	P.	3.35.59.64	— —	90. 6.31.2	— —
25	Sk.	33.51.59	+ 7.63	90.58.56.1	— 25.6
28	P.	32.15.94	+ 7.58	91.29. 4.3	— 23.2
29	Sk.	31.41.47	+ 7.73	91.38.46.7	— 24.6
Nov. 2	P.	29.11.15	+ 7.74	92.15.50.5	— 24.4
5	P.	27. 7.95	+ 7.72	92.41.18.6	— 26.3
8	F.	24.58.37	+ 7.80	93. 4.30.9	— 25.2
11	E.	22.44.52	— 7.83	93.25. 6.5	— 26.1
12	P.	21.59.24	+ 7.72	93.31.23.4	— 24.3
17	P.	18.12.94	+ 7.60	93.57.46.0	— 22.4
24	F.	13.10.91	+ 7.66	94.19.47.9	— 22.4
27	F.	11.12.69	+ 7.53	94.23.41.2	— 21.0
Janthe (98)					
Octb. 29	Sk.	3. 4.45.95	— —	52.17.53.4	— —
Nov. 2	P.	3. 0. 8.28	— 8.77	52.10. 3.7	+ 30.3
5	P.	2.56.32.66	— 8.49	52. 6.46.1	+ 30.2
8	F.	2.52.52.63	— 8.39	52. 5.40.3	+ 23.9
11	E.	2.49.10.40	— 8.76	52. 7. 6.3	+ 32.8
30	Sk.	— —	— —	53. 1.45.6	+ 36.9
Atc (111)					
Oct. 20	P.	3.17.51.20	+ 2.91	63.35.19.8	+ 8.9
25	Sk.	3.13.54.11	+ 2.98	63.42.59.8	+ 10.7
27	F.	3.12.10.33	+ 2.99	63.47.12.9	+ 8.1
28	P.	3.11.16.72	+ 2.88	63.49.40.1	+ 12.2
29	Sk.	3.10.22.27	+ 2.92	63.52.12.7	+ 11.5
Nov. 2	P.	3. 6.36.00	+ 3.01	64. 4. 8.5	+ 13.5
5	P.	3. 3.39.57	+ 3.02	64.14.44.5	+ 13.4
8	F.	3. 0.40.18	+ 3.31	64.26.37.4	+ 11.1
11	E.	2.57.39.63	+ 3.32	64.39.47.1	+ 12.5
15	E.	2.53.41.45	+ 3.52	64.58.54.5	+ 11.6
24	F.	2.45.20.00	+ 3.60	65.46.41.2	+ 7.4
Nemesis (128)					
June 4	E.	15.42.39.66	+ 1. +	107.27.47.9	— 0.5
9	F.			107.24.33.5	— —

J. R. Eastman, Prof. Maths. U. S. N.

Beobachtungen über veränderliche Sterne. 1877.

R Hydrae. 1877.

Wann das kleinste Licht eintrat, lässt sich diesmal aus den Athener Beobachtungen nicht entscheiden. Sehr bestimmt ergibt sich nur, dass seit Febr. 8 die Zunahme regelmässig fortschritt. Am 29. April sah ich den Stern = 7^m oder wenig heller, zuerst mit freiem Auge. Die Vergleichen mit ψ , mit dem Sucher, und

ohne Fernrohr, geschahen nun in grösster Vollständigkeit bis Anfang August. Um die Zeit des starken Mondlichtes beobachtete ich nur am Sucher, obgleich R während des Vollmondes, auch mit unbewaffnetem Auge erkannt werden konnte. Wenn das Maximum in den Juni fällt, ist auch die Position von Athen nicht ge-