XXIV. *Observations on Two Comets discovered at Paramatta in 1824, by Mr Rumker and Mr Dunlop.* Communicated by his Excellency Sir THOMAS BRISBANE, K. C. B. F. R. S. Lond. & Edin. in a Letter to Dr BREWSTER, Sec. R. S. Edin. *To which are added the Elements of their Orbits, calculated by Mr GEORGE INNES, and Mr JAMES GORDON, A. M. Aberdeen.*

(Read May 16. 1825.)

THE two Comets which are the subject of this communication were discovered at Paramatta ; the first by Mr RUMKER, and the second by our countryman Mr DUNLOP.

The elements of both have been calculated from the observations of Mr RUMKER and Mr DUNLOP, by Mr GEORGE INNES, Aberdeen, and Mr JAMES GORDON, A. M.

COMET, August 1824.				
1824.	Mean Time at Paramatta.	Mean R. of COMET.	North mean De- clination.	No. of Ob- servations.
August 21.	^{H.} 8 44' 48",84	245° 24' 17",47	36° 54' 17",66	1
23.	7 11 13,70	244 18 58,30	37 55 14,85	11
24.	7 56 8,90	243 43 34,75	38 26 20,12	4
26.	8 1 0,39	242 38 44,46	39 25 24,65	6
27.	7 51 32,63	242 7 31,00	39 45 33,60	7
28.	7 26 36,32	241 37 14,30	40 22 49,24	4
29.	7 41 49,99	241 7 40,70	40 48 10,80	3
31.	7 24 19,26	240 11 32,85	41 42 20,01	5

1824,

- Aug. 21. Comet north, preceding anonymous star of the 7th magnitude, $\mathcal{R}$ of the star = $246^{\circ} 44' 2'', 47$; declination $36^{\circ} 49' 22'', 18$; diff. in $\mathcal{R}$ $1^{\circ} 19' 45'', 0$; diff. in decl. $0^{\circ} 4' 55'', 48$.
23. Comet north, preceding 25 Hercules, FLAMSTEAD's Catalogue, diff. in $\mathcal{R}$ $29' 9'', 60$; in decl. = $7' 40'', 35$.
24. Comet south, following anonymous star of 7th magnitude, $\mathcal{R}$ of star = $241^{\circ} 44' 3'', 30$; declin. of star $38^{\circ} 30' 33'', 32$; diff. in $\mathcal{R}$ = $1^{\circ} 59' 31'', 45$; diff. in decl. = $4' 13'', 20$.
26. Comet south, following 31 Hercules, BODE's Catalogue, diff. in $\mathcal{R}$ = $1^{\circ} 9' 37'', 70$; diff. in decl. = $4' 40'', 35$.
27. Comet south, preceding 49 Hercules, BODE's Catalogue, diff. in $\mathcal{R}$ = $1^{\circ} 21' 16'', 30$; diff. in decl. = $13' 31'', 70$.
28. Comet north, preceding 49 Hercules, BODE's Catalogue, diff. in $\mathcal{R}$ = $1^{\circ} 51' 33'', 00$; diff. in decl. = $14' 44'', 54$.
29. Comet north, following 13 Hercules, BODE's Catalogue, diff. in $\mathcal{R}$ = $2^{\circ} 8' 27'', 0$; diff. in decl. = $17' 19'', 20$.
31. Comet north, preceding anonymous star of the 7th magnitude, $\mathcal{R}$ of the star = $240^{\circ} 51' 25'', 25$; declination of star = $41^{\circ} 33' 28'', 47$; diff. in $\mathcal{R}$ = $39' 52'', 40$; diff. in decl. = $8' 51'', 54$.

Middle of Observations in Sidereal Time.

	D.	H.	
Aug. 21. at	18	43	35,70
23. ...	17	17	38,30
24. ...	18	6	37,43
26. ...	18	19	22,83
27. ...	18	13	50,05
28. ...	17	52	46,20
29. ...	18	11	56,00
31. ...	18	2	18,50

<i>Elements of Comet.</i>				
1824.	Mr INNES.		Mr GORDON.	
Time of the Perihelion passage,	Sept. 29.	D. H. 7 23' 26"	Sept. 29.	D. H. 7 25' 10"
Longitude of the Perihelion, ...		4 23' 12"		4 22' 11"
Place of the Ascending Node,...		279 17 56		279 19 13
Inclination,		54 22 14		54 22 22
Perihelion distance,		1.048553		1.048739
Motion direct.				

M. Time at Paramatta.

This Comet is evidently the same as that which was first discovered in Europe on the 23d of July by M. SCHEITHAMMER of Chemnitz, and the elements of which, as computed by CAPOCCI, CARLINI, and ENCKE, have been published in the *Edinburgh Journal of Science*, vol. ii. p. 171, 172., and vol. iii., where the latest elements are given, upon the hypothesis of a hyperbolic orbit, which has been found by M. ENCKE to represent the observations better than a parabolic one.—D. B.

COMET of July and August 1824.				
1824.	Mean Time at Paramatta.	Mean $\mathcal{R}$ of Comet.	North mean Declination.	No. of Observations.
July 28.	H. 6 38' 57",11	165° 50' 57",70	16° 1' 24",0	12
29.	6 49 24,29	166 43 15,30	16 41 4,72	8
31.	6 53 35,24	168 18 6,20	17 53 37,25	12
Aug. 1.	6 46 1,41	169 1 58,80	* 18 27 14,56	10
3.	7 0 33,34	170 24 9,80	19 30 25,74	14
4.	6 50 17,73	171 0 52,85	19 59 40,65	9
6.	6 54 44,46	172 9 20,30	20 55 15,23	6
8.	6 40 28,72	173 11 34,6	21 44 41,35	1
11.	6 50 56,35	174 40 29,0	22 54 5,20	1

1824,

- July 28. Comet south, preceding θ Leonis, diff. in $\mathcal{R}$ = 24' 31",30; diff. in declin. = 21' 57",61.
29. Comet north, following θ Leonis, diff. in $\mathcal{R}$ = 27' 46",30; diff. in declin. = 17' 43",12.
31. Comet south, preceding anonymous star of the 7th magnitude, $\mathcal{R}$ of the star = 168° 35' 37",50, and the declination 18° 6' 6",30 North; diff. in $\mathcal{R}$ = 17' 31",30; diff. in declination = 12' 29",05.
- Aug. 1. Comet north, following another anonymous star of 7th magnitude, $\mathcal{R}$ of the star = 168° 47' 40",80; declination = 18° 18' * 03",37; diff. in $\mathcal{R}$ = 14' 18",0; diff. in decl. = 9' 11",19.
3. Comet north, following δ Leonis, diff. in $\mathcal{R}$ = 4' 0",80; diff. in decl. = 8' 11",54.

* In the original it is inserted 18° 30' 03",37. It probably should have been 18° 18' 3",37. This gives 18° 27' 14",56 for the north declination, as in the Table.

1824,

- Aug. 4. Comet north, preceding a small anonymous star, 8th magnitude, $\mathcal{R}$ of small star = $171^{\circ} 1' 9'',0$; declination = $19^{\circ} 46' 59'',20$; diff. in $\mathcal{R}$ = $0' 16'',15$; diff. in declin. = $12' 41'',45$.
6. Comet south, following 417 Leonis, BODE's Catalogue, diff. in $\mathcal{R}$ = $40' 46'',20$; diff. in declin. = $29' 44'',17$.
8. Comet north, following 417 Leonis, diff. in $\mathcal{R}$ = $1^{\circ} 43' 0'',5$; declination $19' 41'',95$.
11. Comet south, following 445 Leonis, BODE's Catalogue, diff. in $\mathcal{R}$ = $1^{\circ} 27' 0''$; diff. in declin. = $17' 9'',80$.

Middle of Observations in Sidereal Time.

July 28.	D.	H.	
at 15	2	46,06	
29. ...	15	17 11,46	
31. ...	15	29 16,17	
Aug. 1. ...	15	25 37,91	
3. ...	15	48 5,14	
4. ...	15	45 40,95	
6. ...	15	54 4,91	
8. ...	15	47 40,0	
11. ...	16	9 59,0	

<i>Elements of Comet.</i>							
1824.		Mr INNES.			Mr GORDON.		} M. Time at Paramatta.
		D.	H.		D.	H.	
Time of the perihelion passage,		July 10.	10	17' 30"	July 10.	10° 17' 41"	
Longitude of the Perihelion,.....			259°	45 32		259 45 31	
Place of the Ascending Node, ...			330	29 8		330 29 8	
Inclination,			57	0 36		57 0 36	
Perihelion distance,			0.5956114			0.5956147	
Motion retrograde.							

This comet, which was not seen in Europe, is stated by Dr OLBERS to have been discovered by Mr RUMKER, and to have been observed by him from the 15th July to the 6th August. The following are the elements given of it by Dr OLBERS, as computed by Mr RUMKER :

Time of Perihelion passage, Mean Time at Paris, July 11.	^{H.} 12 26 27
Longitude of the Perihelion,.....	260° 16 32
Longitude of the Ascending Node,	234 19 9
Angle between the Perihelion and the Node,	334 2 37
Inclination of Orbit,	54 34 19
Perihelion distance,.....	0.591263

Motion retrograde.

The difference between these elements and those obtained by Mr GORDON and Mr INNES is very considerable. Dr OLBERS remarks, that the observations might have been reduced with greater accuracy; and he adds, that we may perhaps expect additional ones from Sir THOMAS BRISBANE or Mr DUNLOP.—D. B.