

by its agreement with the known difference at particular epochs. At the end of the British Nautical Almanac for 1862 is found a comparison of the two tables, from which it appears that Burekhardt's mean longitude was then greater than Hansen's by about $14''\cdot 2$. The general agreement between 1750 and 1800, when both tables agreed with observations, shows that the difference of mean motion is certainly affected with no sensible error.

Year.	Burekhardt.				Hansen.				H.-B.
	L_0	Sec. Var.	Long. Period.	Corr. Mean Longitude.	L_0	Sec. Var.	Long. Period.	Mean Longitude.	
1630	100 19 28.0	+ 4.5	- 8.0	100 19 24.9	18 14.4	+ 38.5	- 21.4	100 18 31.5	- 53.4
40	347 0 45.4	+ 3.6	- 10.8	347 0 38.2	5 30.8	+ 34.1	- 20.0	347 5 50.4	- 47.8
50	233 94 2.7	+ 2.5	- 12.3	233 53 52.9	52 58.3	+ 30.0	- 17.2	233 53 11.1	- 31.8
60	120 41 20.1	+ 1.6	- 12.3	120 41 9.4	40 20.3	+ 26.1	- 13.1	120 40 33.3	- 30.8
70	7 28 37.4	+ 0.9	- 10.8	7 28 27.5	27 42.2	+ 22.5	- 8.1	7 27 50.6	- 30.9
80	254 15 54.8	+ 0.4	- 8.0	254 15 47.2	15 4.2	+ 10.2	- 2.9	254 15 21.1	- 20.1
90	141 3 12.1	+ 0.1	- 4.2	141 3 7.8	2 28.1	+ 16.1	+ 3.9	141 2 40.1	- 21.7
1700	27 50 29.5	+ 0.0	+ 0.2	27 50 29.7	49 48.1	+ 13.3	+ 10.0	27 50 11.4	- 18.3
10	274 37 46.8	+ 0.1	+ 4.4	274 37 51.3	37 10.0	+ 10.8	+ 15.6	274 37 30.4	- 14.9
20	161 25 4.2	+ 0.4	+ 8.3	161 25 12.9	24 32.0	+ 8.5	+ 20.6	161 25 1.0	- 11.9
30	48 12 21.5	+ 0.9	+ 11.0	48 12 33.4	11 59.9	+ 6.5	+ 24.2	48 12 24.7	- 8.7
40	204 59 38.0	+ 1.6	+ 12.4	204 59 52.9	59 15.9	+ 4.8	+ 26.4	204 59 47.1	- 5.8
50	181 47 56.2	+ 2.5	+ 12.2	181 47 10.0	46 37.9	+ 3.3	+ 26.9	181 47 8.1	- 2.9
60	68 34 13.6	+ 3.6	+ 10.6	68 34 27.8	33 59.8	+ 2.1	+ 25.7	68 34 27.6	- 0.2
70	315 21 30.9	+ 4.0	+ 7.8	315 21 43.7	21 21.8	+ 1.2	+ 22.9	315 21 45.9	+ 2.2
80	202 8 48.3	+ 6.4	+ 3.9	202 8 58.6	8 43.7	+ 0.5	+ 18.5	202 9 2.7	+ 4.1
90	88 56 5.6	+ 8.1	- 0.4	88 56 13.4	56 5.7	+ 0.1	+ 12.8	88 56 18.6	+ 5.2
1800	335 43 23.0	+ 10.0	- 4.7	335 43 28.4	43 27.7	+ 0.0	+ 6.1	335 43 33.8	+ 5.4
10	222 30 40.4	+ 12.1	- 8.3	222 30 44.2	30 49.6	+ 0.1	- 1.1	222 30 48.6	+ 4.4
20	109 17 57.8	+ 14.4	- 11.0	109 18 1.2	18 11.6	+ 0.5	- 8.4	109 18 3.7	+ 2.5
30	356 5 15.2	+ 16.0	- 12.4	356 5 19.7	5 33.5	+ 1.2	- 15.4	356 5 19.3	- 0.4
40	242 52 32.5	+ 10.0	- 12.2	242 52 39.0	52 55.5	+ 2.1	- 21.6	242 52 36.0	- 3.9
50	129 39 49.9	+ 22.5	- 10.6	129 40 1.8	40 17.5	+ 3.3	- 20.5	129 39 54.3	- 7.5
60	16 27 7.2	+ 25.6	- 7.6	16 27 25.2	27 39.4	+ 4.8	- 29.8	16 27 14.4	- 10.8
70	263 14 24.6	+ 28.9	- 3.8	263 14 40.7	15 1.4	+ 6.5	- 31.3	263 14 36.6	- 13.1

Burekhardt's tables have been selected for this comparison because they have been extensively compared with observations made before 1700. The additions to the *Connaissance des Temps* for 1824 contain a paper by Burekhardt himself giving a comparison of his tables with observations of occultations made by Flamstead, Hevelius and others, between 1637 and 1700. The general result of this comparison is that the mean longitude of his tables could hardly have been more than a very few seconds in error in the year 1670. But, the preceding table shows that for this epoch Hansen's mean longitude is $30''$ less than Burekhardt's. Therefore, unless we suppose Burekhardt's investigation to be affected with some egregious systematic error we must admit that the mean longitude of Hansen's tables for the epoch 1670 is about $30''$ too small.

Desiring an independent test of this conclusion I have selected certain observations which, with the data available, seemed