

Results deduced from Occultations of Stars by the Moon observed at the Cambridge Observatory
in the year 1844.

The following are the observations from which the subjoined results were calculated :

Reference Number.	Greenw. Mean Solar Time of Observation 1844.			Star.	Phaenomenon.	Moon's Limb.	Remarks.
1	Janr.	2	11 ^h 8 ^m 18 ^s .86	τ Tauri	Disappearance	Dark	Very exact.
2		2	12 25 43,24	τ Tauri	Reappearance	Bright	
3	Mar.	28	7 20 35,98	r Cancri	Disappearance	Dark	
4		29	10 41 59,47	α^2 Cancri	Disappearance	Dark	Somewhat uncertain.
5		29	11 23 31,53	α^2 Cancri	Reappearance	Bright	Considered good.
6	April	1	6 40 39,79	ϵ Leonis	Disappearance	Dark	
7		1	7 36 40,93	ϵ Leonis	Reappearance	Bright	
8		2	10 55 32,00	q Virginis	Disappearance	Dark	Exact.
9	Aug.	1	13 59 47,71	16 Piscium	Reappearance	Dark	
10	Sept.	29	8 24 8,30	ρ^3 Arietis	Disappearance	Bright	The Moon too bright for the star.
11		29	9 24 11,24	ρ^3 Arietis	Reappearance	Dark	
12	Oct.	3	12 39 2,72	16 Geminor.	Disappearance	Bright	Doubtful.
13		3	13 12 21,03	ν Geminor.	Disappearance	Bright	
14		3	13 36 6,71	16 Geminor.	Reappearance	Dark	
15		3	14 13 18,98	ν Geminor.	Reappearance	Dark	The time by another observer was 0 ^s .2
16	Nov.	25	10 52 39,48	ι Tauri	Disappearance	Bright	later.
17	Dec.	20	3 59 59,37	ρ^3 Arietis	Disappearance	Dark	Very exact.

The Longitude of the Cambridge Observatory is assumed to be 23°54 East of Greenwich; the Latitude 52°12'51"63; the angle of the vertex 11'12"00; and the ratio of the radius drawn from the Earth's centre to the place of observation, to the Aequatoreal radius, is the number whose Logarithm is 9,9990916. All the other data employed in the Computation of the following results were either taken immediately, or deduced by interpolation, from the Nautical Almanac.

Let the true Longitude of the Cambridge Observatory be $-23^{\circ}54' + \tau^s$, and the Latitude be supposed to require

no correction. Let the true Right Ascension and North Polar Distance of the Moon, and the true Right Ascension and North Polar Distance of the Star, be equal to their assumed values increased respectively by x, y, e and f , expressed in seconds of space. Also let the true Horizontal Equatoreal Parallax be equal to the Tabular value $\times (1 + \frac{m}{10000})$, and the true Semidiameter of the Moon be equal to the Tabular Semidiameter $\times (1 + \frac{n}{10000})$. Then the results of the computation of the occultations, expressed as equations containing the small corrections of the assumed quantities, are as follows:

Ref. Numb.	Final Equation.							
1	$+7^m13 = -0,923 \times x$	$-0,145 \times y$	$+0,913 \times e$	$+0,144 \times f$	$-0,505 \times r$	$+0,485 \times m$	$-0,909 \times n$	
2	$-4,85 = +0,921$	$-0,145$	$-0,913$	$+0,148$	$+0,513$	$-1,558$	$-0,908$	
3	$+12,12 = -0,523$	$-0,853$	$+0,517$	$+0,842$	$-0,399$	$-1,679$	$-0,935$	
4	$+5,65 = -0,187$	$-0,993$	$+0,187$	$+0,981$	$-0,277$	$-2,010$	$-0,950$	
5	$-0,10 = +0,880$	$-0,450$	$-0,873$	$+0,448$	$+0,395$	$-2,419$	$-0,949$	
6	$-0,17 = -0,592$	$-0,812$	$+0,589$	$+0,808$	$-0,522$	$-3,458$	$-0,985$	
7	$-1,63 = +1,007$	$+0,014$	$-0,999$	$-0,014$	$+0,568$	$+1,649$	$-0,987$	
8	$+0,39 = -0,999$	$-0,036$	$+0,988$	$+0,035$	$-0,592$	$-0,535$	$-1,000$	
9	$-6,35 = +0,916$	$-0,426$	$-0,907$	$+0,422$	$+0,543$	$-0,734$	$-0,933$	
10	$+2,37 = -0,834$	$+0,490$	$+0,835$	$-0,484$	$-0,483$	$-0,578$	$-0,894$	
11	$-7,18 = +0,976$	$-0,131$	$-0,947$	$+0,128$	$+0,502$	$+1,618$	$-0,896$	
12	$-9,92 = -0,789$	$+0,548$	$+0,788$	$-0,540$	$-0,389$	$-0,421$	$-0,897$	
13	$-6,72 = -0,786$	$-0,554$	$+0,781$	$+0,553$	$-0,447$	$-2,679$	$-0,898$	
14	$-0,10 = +0,768$	$+0,585$	$-0,762$	$-0,581$	$+0,439$	$+2,591$	$-0,899$	
15	$+4,03 = +0,816$	$-0,507$	$-0,812$	$+0,501$	$+0,405$	$+0,340$	$-0,900$	
16	$+0,57 = -0,659$	$+0,723$	$+0,654$	$-0,712$	$-0,359$	$+0,646$	$-0,893$	
17	$+0,98 = -0,766$	$+0,604$	$+0,765$	$-0,597$	$-0,455$	$-0,173$	$-0,892$	

Cambridge Observatory, 1849, Dec. 27.

J. Challis.