Atmospheric Refraction of Light (based on data from G. Bomford, "Geodesy, 4th edition, OUP, 1980, ISBN 0-19-851946-X)

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Height (m)	Pressure (mb)	Temperature (°C)	Time	dT/dh (°C/m)	dN/dh (/m)	K factor	Note
0	1000	27	Afternoon	-0.0055	-0.025	1.19	1
1500	840	12	Any time	-0.0055	-0.023	1.17	2
3000	700	2	Anytime	-0.0055	-0.021	1.15	3
0	1000	27	Midday	-0.033	0	1.0	4
0	1000	27	Midday	-0.07	+0.032	0.83	5
0	1000	-3	Night	+0.11	-0.157	infinity	6
0	1000	-3	Night	+0.20	-0.254	1.63	7

Notes

(a) dT/dh is the vertical temperature gradient

(b) dN/dh is the vertical refractivity gradient. N , the refractivity, is related to , the refractive index, by $N = (n - 1) \times 10^6$

(c) K is the optical value of the effective Earth radius factor

(1) Between hills near sea level. In the afternoon, or all day if cool and cloudy with moderate wind

(2) Between hills well clear of ground. All day

(3) Between mountains. All day

(4) About 10m above bare plains. Midday, still and clear

(5) As (4) but more extreme. The path is convex towards the ground. Probably some heat mirage.

(6) About 10m above bare plains. Night. Still and clear.

(7) As (6) but more severe.

Cold air above warm water will give a K value similar to (4).

Hot air above cold water will give a K value similar to (6)