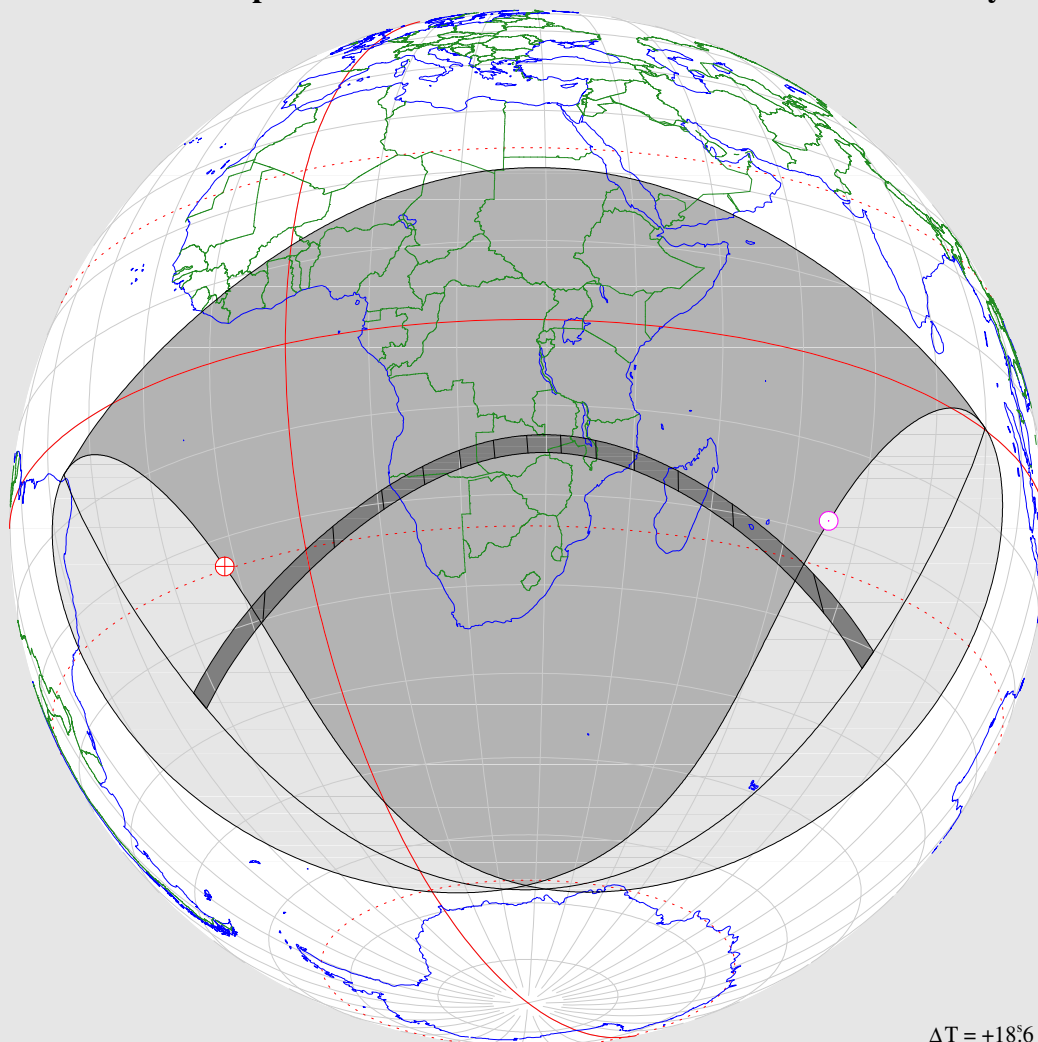


II. - Annular Eclipse of the Sun

1677 May 31



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$\Delta T = +18^s.6$
Globe centred on E 27°9' and S 23°8'

Circumstances	Time (UT)	Longitude	Latitude
	^h ^m	^o /	^o /
⊕ Eclipse begins; first contact with Earth	7 23.3	W 11 36.7	S 23 07.4
Beginning of northern limit of penumbra	8 28.5	W 36 00.0	S 4 33.5
Beginning of northern limit of umbra	8 37.9	W 23 51.6	S 34 48.4
Beginning of centre line; central eclipse begins	8 39.0	W 23 27.1	S 35 53.4
Beginning of southern limit of umbra	8 40.2	W 23 01.8	S 36 59.2
Central eclipse at local apparent noon	10 10.4	E 26 40.3	S 14 31.1
End of southern limit of umbra	11 47.0	E 77 39.2	S 32 22.6
End of centre line; central eclipse ends	11 48.2	E 78 00.3	S 31 15.3
End of northern limit of umbra	11 49.3	E 78 21.0	S 30 08.8
End of northern limit of penumbra	11 58.6	E 89 43.4	N 0 16.1
⊙ Eclipse ends; last contact with Earth	13 03.9	E 65 34.8	S 18 21.5