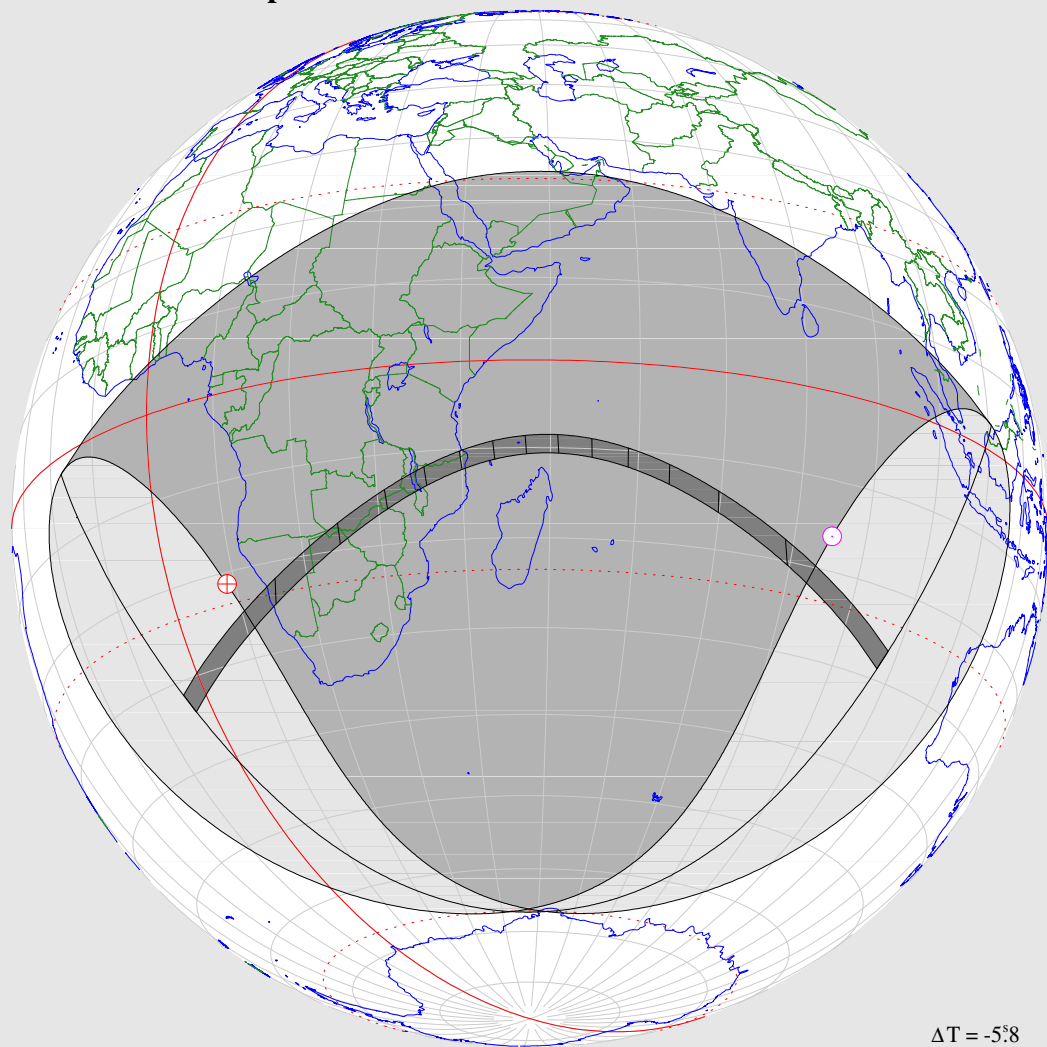


III. - Annular Eclipse of the Sun

1889 June 28



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$\Delta T = -5^s 8$
Globe centred on E 47°7' and S 19°0'

Circumstances	Time (UT)	Longitude	Latitude
	h m	° /	° /
⊕ Eclipse begins; first contact with Earth	6 06.1	E 8 51.9	S 21 16.5
Beginning of northern limit of penumbra	7 14.8	W 17 05.5	S 2 01.8
Beginning of northern limit of umbra	7 19.7	W 3 54.3	S 31 29.1
Beginning of centre line; central eclipse begins	7 20.7	W 3 27.3	S 32 36.1
Beginning of southern limit of umbra	7 21.7	W 2 59.6	S 33 43.8
Central eclipse at local apparent noon	8 56.9	E 46 30.7	S 9 44.1
End of southern limit of umbra	10 38.5	E 97 28.7	S 28 44.9
End of centre line; central eclipse ends	10 39.5	E 97 52.1	S 27 36.5
End of northern limit of umbra	10 40.5	E 98 15.2	S 26 28.8
End of northern limit of penumbra	10 45.3	E 110 45.9	N 3 08.1
⊙ Eclipse ends; last contact with Earth	11 54.1	E 85 03.9	S 16 10.2