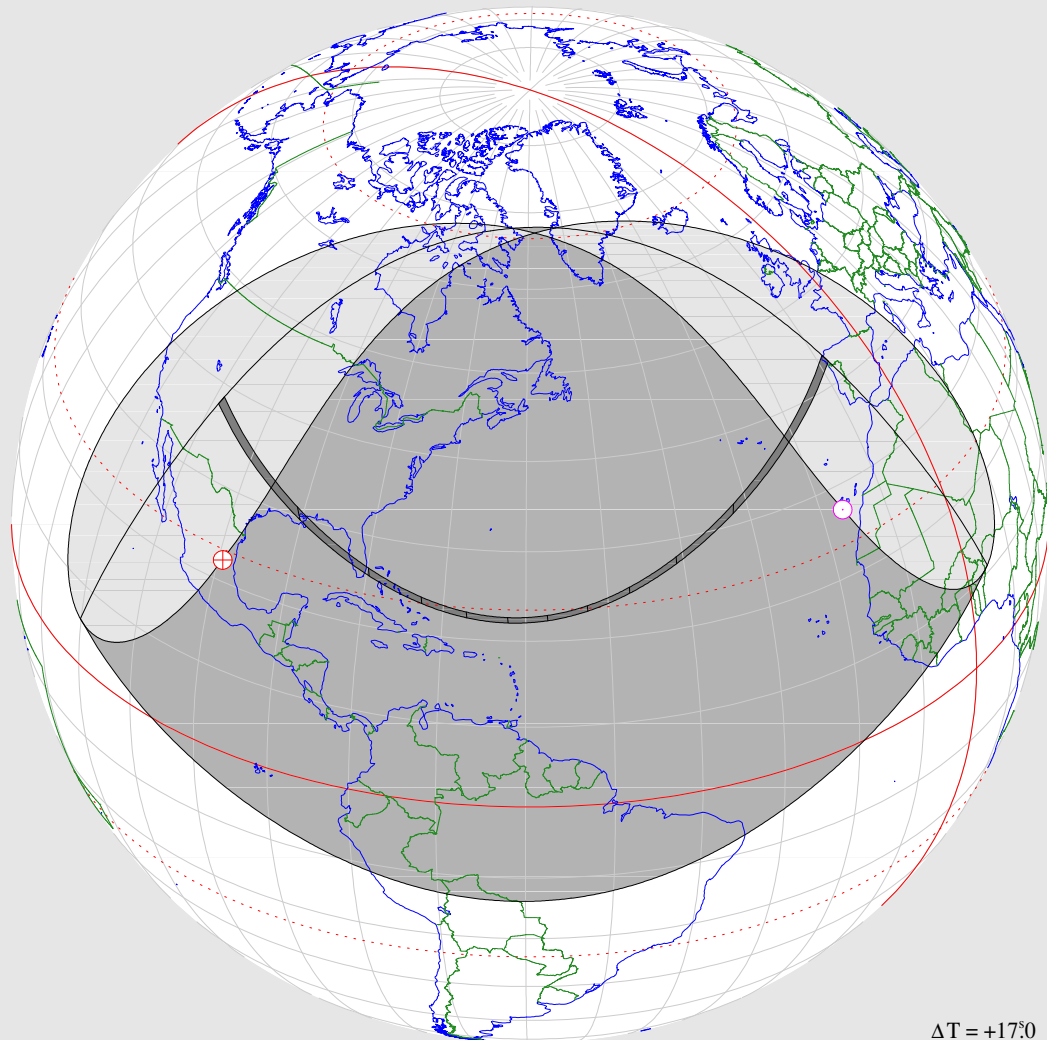


# I. - Annular Eclipse of the Sun

1777 January 09



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$\Delta T = +17^s0$   
Globe centred on W 59°5 and N 33°0

Circumstances	Time (UT)		Longitude		Latitude	
	h	m	°	'	°	'
⊕ Eclipse begins; first contact with Earth	13	23.6	W 99	21.2	N 22	19.6
Beginning of southern limit of penumbra	14	17.9	W 120	10.3	N 5	45.0
Beginning of southern limit of umbra	14	36.6	W 108	56.6	N 37	44.0
Beginning of centre line; central eclipse begins	14	37.2	W 108	45.6	N 38	14.1
Beginning of northern limit of umbra	14	37.9	W 108	34.3	N 38	44.5
Central eclipse at local apparent noon	15	58.9	W 57	44.2	N 22	33.0
End of northern limit of umbra	17	12.6	W 8	38.5	N 43	25.3
End of centre line; central eclipse ends	17	13.3	W 8	24.7	N 42	56.9
End of southern limit of umbra	17	13.9	W 8	11.2	N 42	28.6
End of southern limit of penumbra	17	32.6	E 4	25.4	N 10	47.8
⊙ Eclipse ends; last contact with Earth	18	26.9	W 16	44.7	N 27	16.8