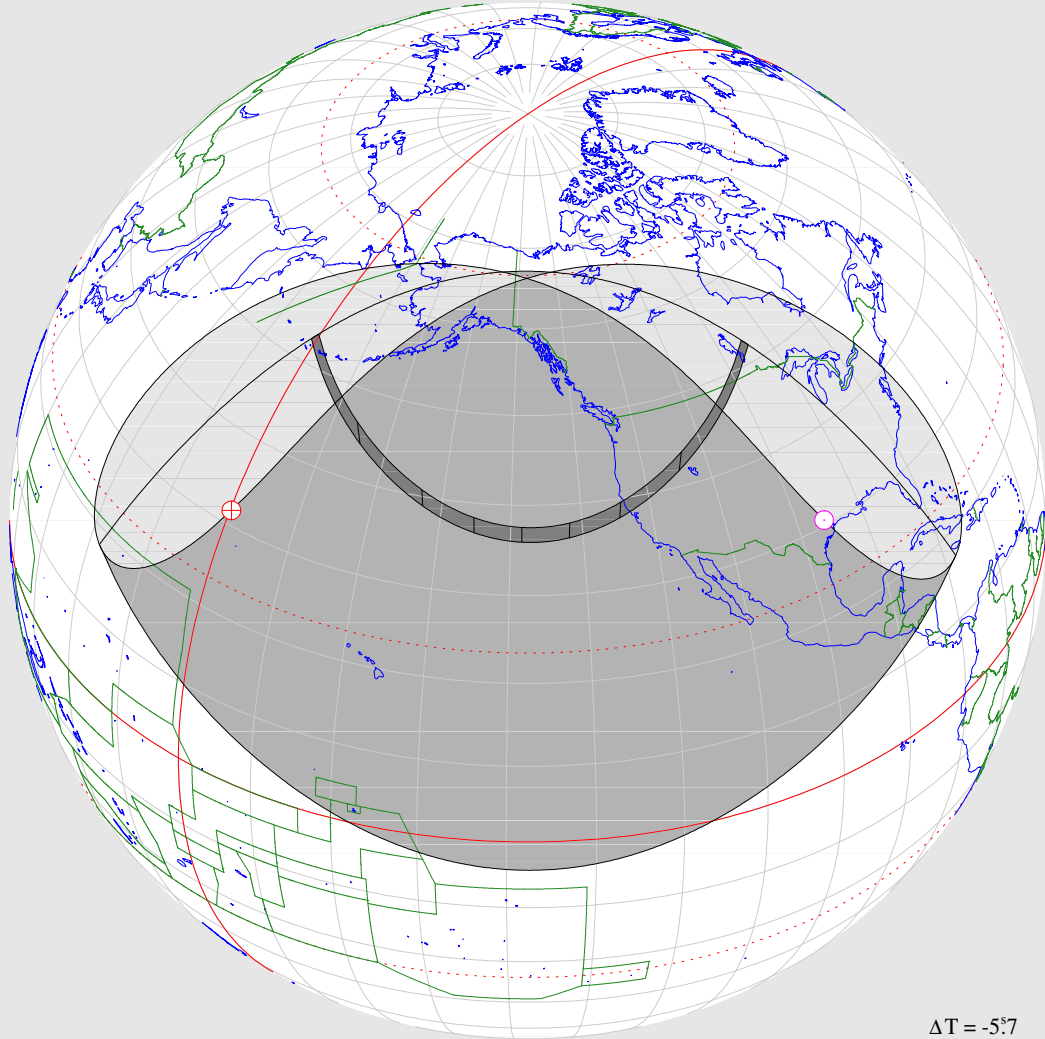


I. - Total Eclipse of the Sun

1889 January 01



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$\Delta T = -5^m 7^s$
Globe centred on W 137°6 and N 38°3

Circumstances	Time (UT)		Longitude		Latitude	
	h	m	°	'	°	'
⊕ Eclipse begins; first contact with Earth	19	03.7	W179	48.0	N31	34.9
Beginning of southern limit of penumbra	19	48.2	E 161	56.9	N18	07.8
Beginning of southern limit of umbra	20	23.4	E 178	53.3	N52	39.6
Beginning of centre line; central eclipse begins	20	24.2	E 179	16.2	N53	04.5
Beginning of northern limit of umbra	20	25.0	E 179	40.1	N53	29.6
Central eclipse at local apparent noon	21	16.1	W137	58.4	N36	42.8
End of northern limit of umbra	22	08.8	W 94	52.0	N52	40.7
End of centre line; central eclipse ends	22	09.6	W 94	30.0	N52	15.8
End of southern limit of umbra	22	10.4	W 94	08.9	N51	51.3
End of southern limit of penumbra	22	45.6	W 77	51.0	N17	08.6
⊙ Eclipse ends; last contact with Earth	23	30.2	W 95	59.7	N30	37.8