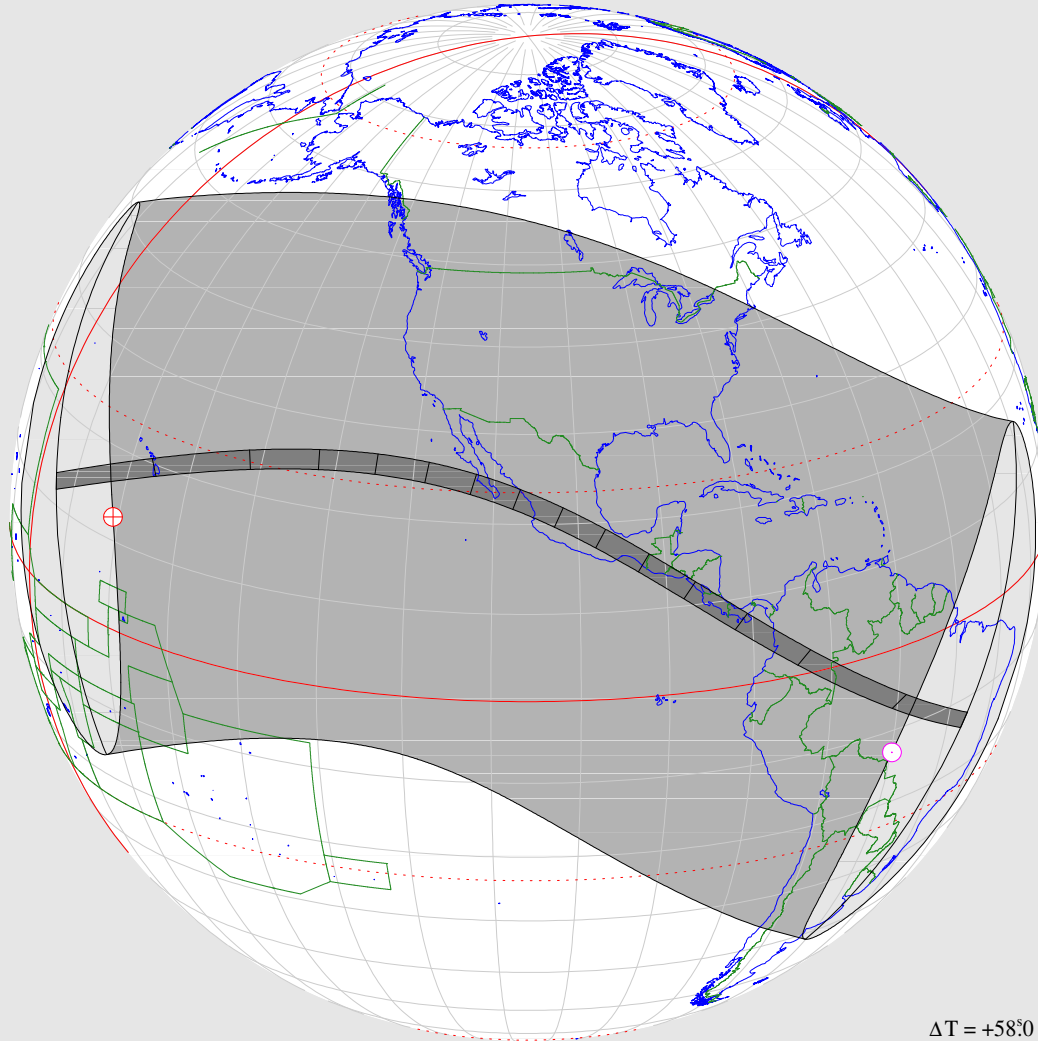


# IV. - Total Eclipse of the Sun

1991 July 11



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$\Delta T = +58^s 0$   
Globe centred on W 105°9 and N 20°2

Circumstances	Time (UT)		Longitude		Latitude	
	h	m	°	'	°	'
⊕ Eclipse begins; first contact with Earth	16	28.7	W161	00.3	N12	32.5
Beginning of southern limit of umbra	17	23.0	W174	11.3	N11	38.5
Beginning of centre line; central eclipse begins	17	23.3	W174	36.5	N12	28.7
Beginning of northern limit of umbra	17	23.5	W175	02.3	N13	18.8
Beginning of southern limit of penumbra	17	30.2	W164	04.6	S16	55.9
Beginning of northern limit of penumbra	17	45.6	E164	07.7	N41	12.4
Central eclipse at local apparent noon	19	06.1	W105	10.4	N21	59.0
End of northern limit of penumbra	20	26.6	W28	23.1	N16	30.6
End of southern limit of penumbra	20	41.7	W60	12.2	S41	37.3
End of northern limit of umbra	20	48.5	W45	46.9	S12	08.5
End of centre line; central eclipse ends	20	48.8	W46	12.4	S12	58.3
End of southern limit of umbra	20	49.1	W46	37.7	S13	48.2
⊙ Eclipse ends; last contact with Earth	21	43.4	W59	48.8	S12	54.5