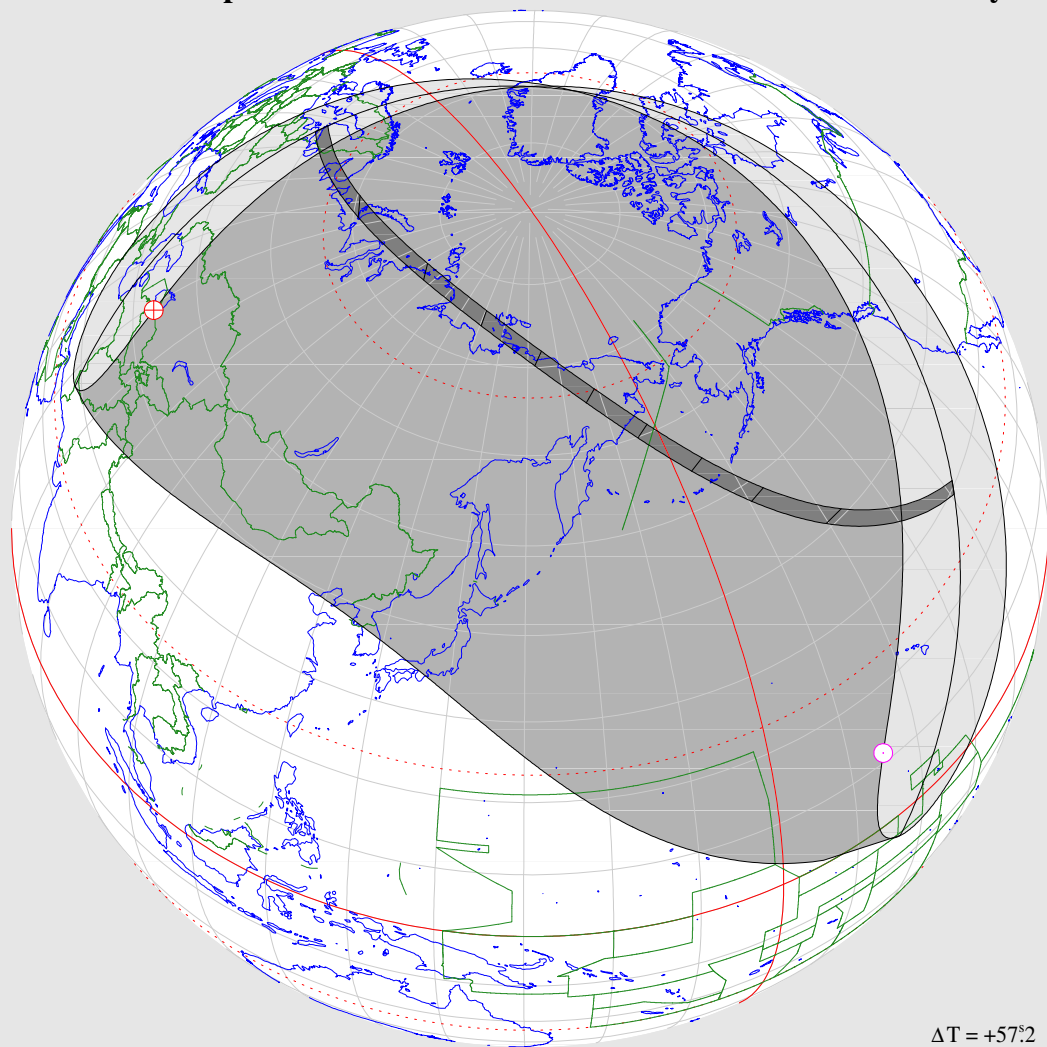


### III. - Total Eclipse of the Sun

1990 July 22



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$\Delta T = +57^{\text{s}}.2$   
Globe centred on E 150°7 and N 51°9

Circumstances	Time (UT)	Longitude	Latitude
	<sup>h</sup> <sup>m</sup>	<sup>o</sup> /	<sup>o</sup> /
⊕ Eclipse begins; first contact with Earth	0 40.0	E 60 59.8	N 43 28.2
Beginning of southern limit of penumbra	1 09.9	E 62 25.9	N 28 37.2
Beginning of southern limit of umbra	1 52.4	E 24 51.9	N 59 17.3
Beginning of centre line; central eclipse begins	1 53.4	E 23 42.0	N 59 46.6
Beginning of northern limit of umbra	1 54.4	E 22 29.5	N 60 15.9
Central eclipse at local apparent noon	2 36.8	E 142 24.9	N 73 28.0
End of northern limit of umbra	4 10.2	W 138 18.8	N 30 32.8
End of centre line; central eclipse ends	4 11.2	W 138 52.4	N 29 56.5
End of southern limit of umbra	4 12.2	W 139 25.3	N 29 20.6
End of southern limit of penumbra	4 54.5	W 163 33.4	S 4 07.6
⊙ Eclipse ends; last contact with Earth	5 24.5	W 165 15.6	N 11 22.8