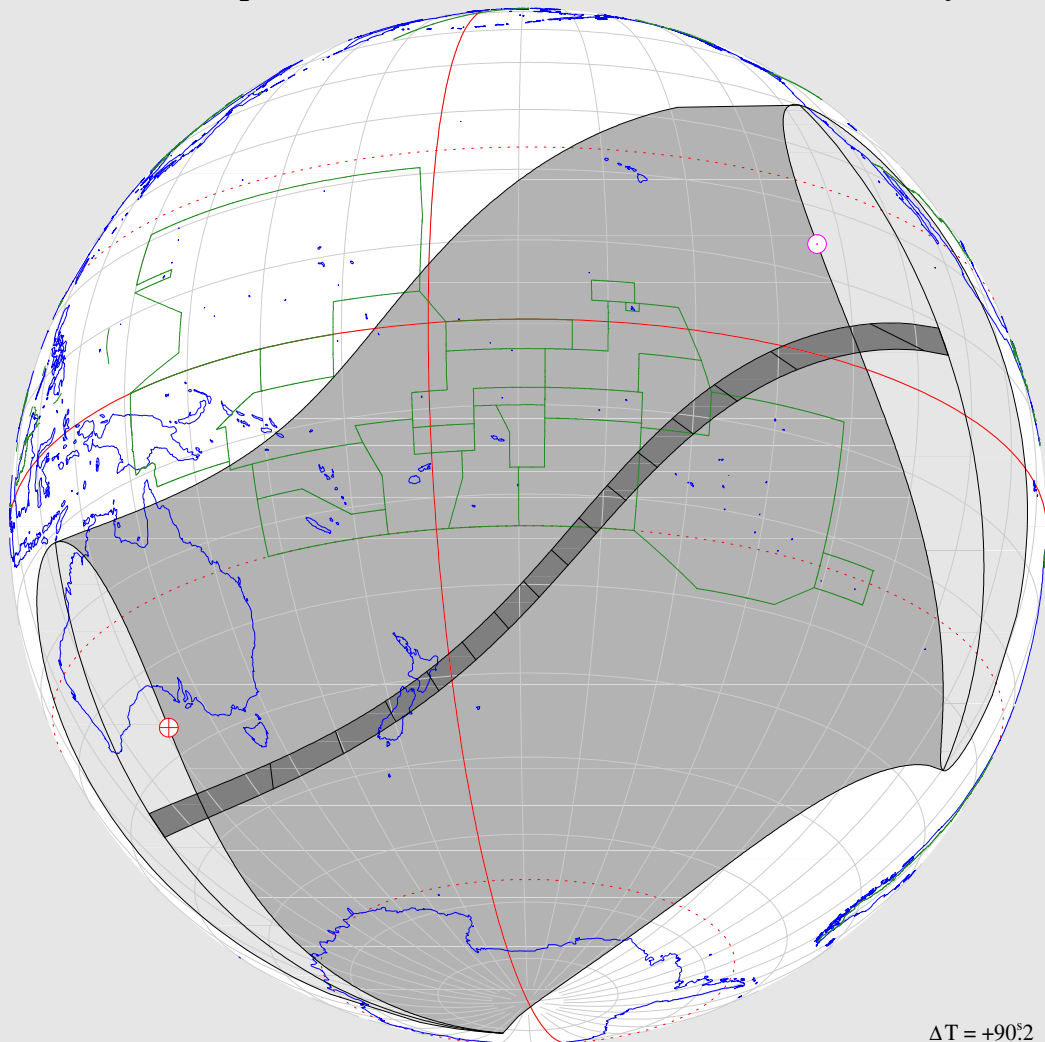


# I. - Annular Eclipse of the Sun

## 2045 February 16-17



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$\Delta T = +90^{\circ}2$   
Globe centred on W 168°9 and S 23°6

Circumstances	Time (UT)	Longitude	Latitude
	h m	° /	° /
⊕ Eclipse begins; first contact with Earth	20 52.8	E 131 11.3	S 36 46.6
Beginning of northern limit of penumbra	21 53.1	E 122 50.1	S 11 04.7
Beginning of northern limit of umbra	22 01.3	E 112 13.9	S 41 51.0
Beginning of centre line; central eclipse begins	22 02.6	E 111 20.3	S 43 18.6
Beginning of southern limit of umbra	22 03.9	E 110 23.6	S 44 46.8
Beginning of southern limit of penumbra	23 03.2	E 24 34.0	S 77 59.2
Central eclipse at local apparent noon	23 36.5	W 170 38.4	S 32 29.4
End of southern limit of penumbra	0 46.6	W 89 33.2	S 35 23.6
End of southern limit of umbra	1 45.5	W 114 13.0	N 6 17.2
End of centre line; central eclipse ends	1 46.8	W 114 51.5	N 7 46.8
End of northern limit of umbra	1 48.0	W 115 29.0	N 9 15.5
End of northern limit of penumbra	1 55.8	W 125 40.4	N 40 04.7
⊙ Eclipse ends; last contact with Earth	2 56.5	W 133 44.3	N 14 25.4