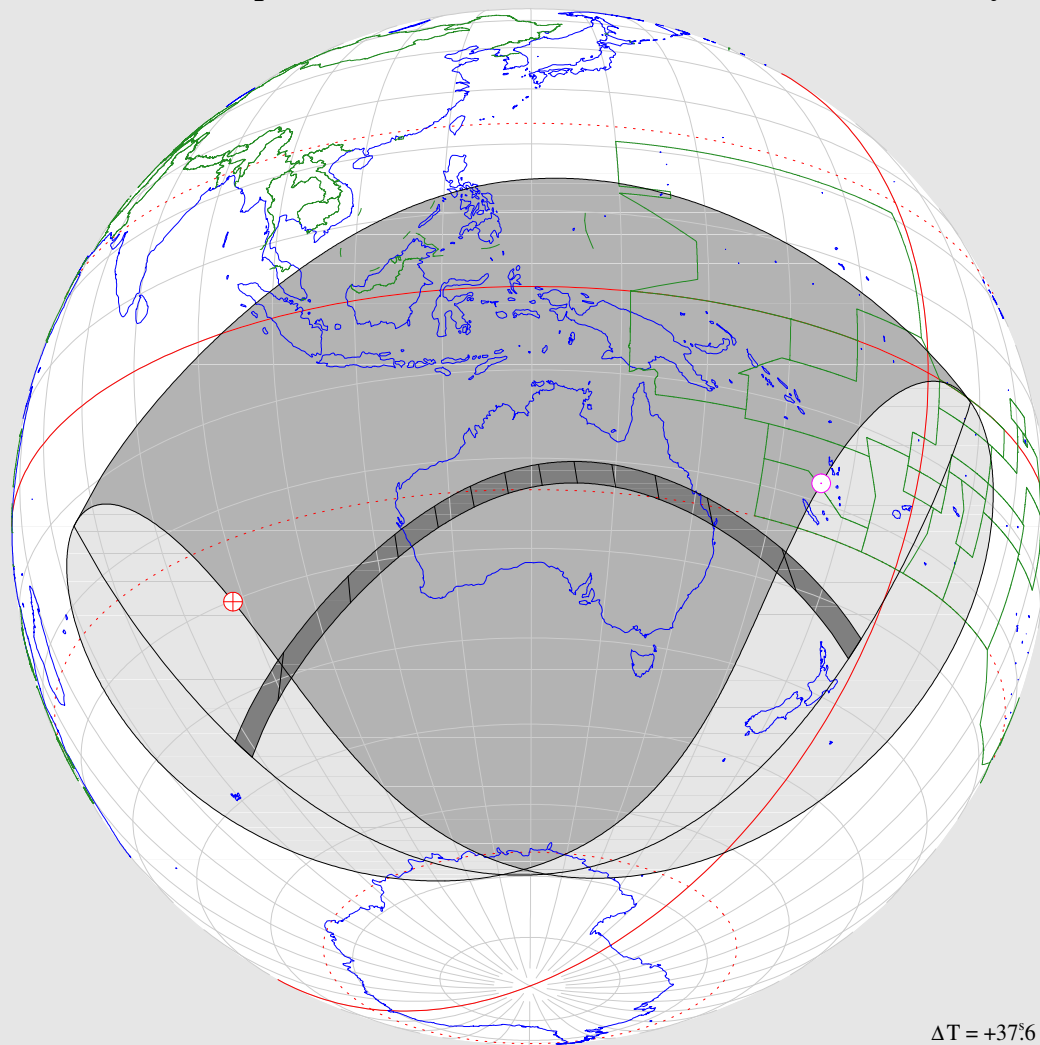


II. - Annular Eclipse of the Sun

1659 May 21



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$\Delta T = +37^{\text{m}}6$
Globe centred on E 129°8' and S 27°6'

Circumstances	Time (UT)		Longitude		Latitude	
	h	m	°	'	°	'
⊕ Eclipse begins; first contact with Earth	0	51.8	E 88	19.3	S 30	07.8
Beginning of northern limit of penumbra	1	52.8	E 65	30.4	S 12	39.0
Beginning of northern limit of umbra	2	09.8	E 77	22.9	S 44	08.2
Beginning of centre line; central eclipse begins	2	11.4	E 77	56.2	S 45	21.7
Beginning of southern limit of umbra	2	13.1	E 78	32.0	S 46	36.5
Central eclipse at local apparent noon	3	29.0	E 126	43.3	S 22	47.2
End of southern limit of umbra	5	03.4	E 178	17.7	S 34	52.9
End of centre line; central eclipse ends	5	05.1	E 178	35.7	S 33	33.9
End of northern limit of umbra	5	06.7	E 178	52.9	S 32	16.5
End of northern limit of penumbra	5	23.7	W 172	01.1	S 0	14.0
⊙ Eclipse ends; last contact with Earth	6	24.8	E 165	58.7	S 17	53.4