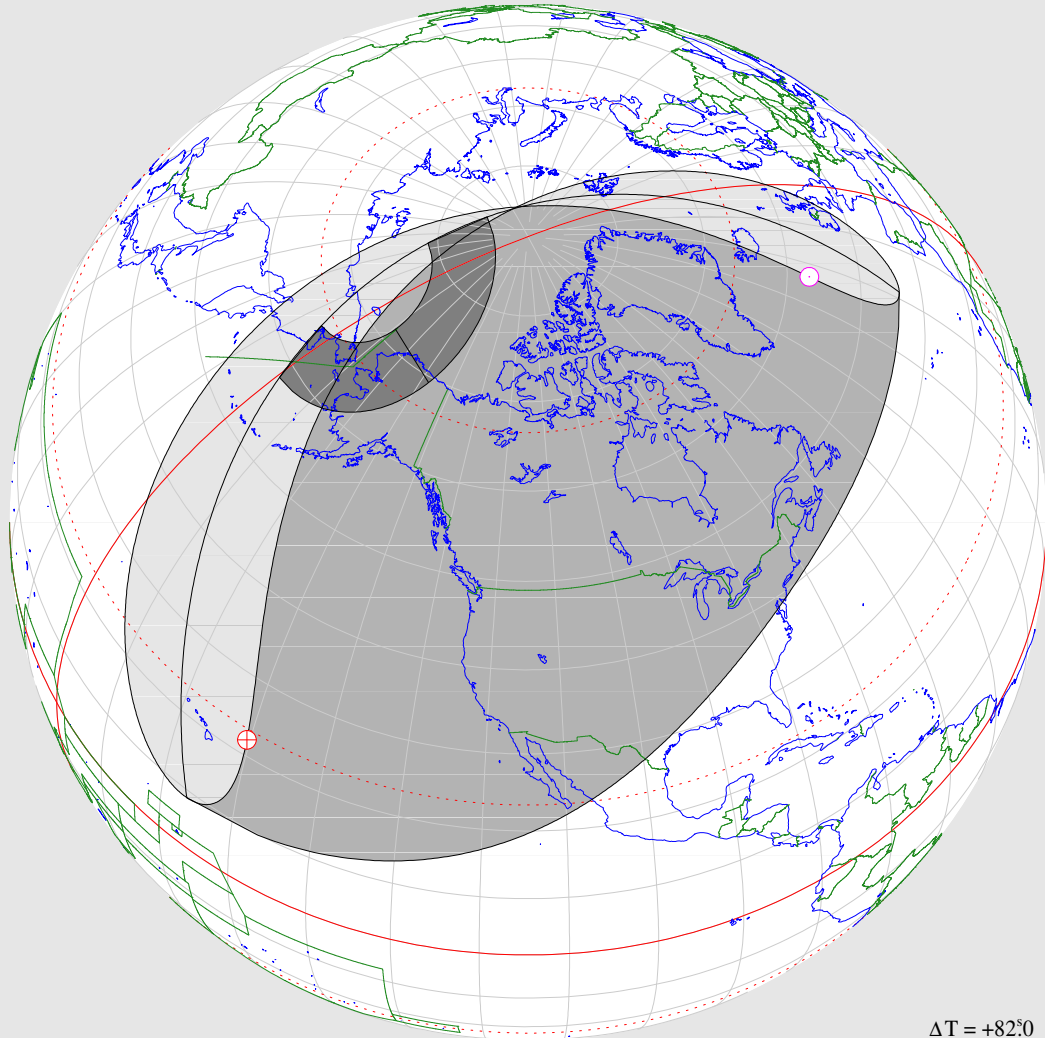


I. - Total Eclipse of the Sun

2033 March 30



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$\Delta T = +82^{\text{s}}0$
Globe centred on W 114^o6 and N 56^o5

Circumstances	Time (UT)		Longitude		Latitude	
	h	m	o	'	o	'
⊕ Eclipse begins; first contact with Earth	15	59.4	W150	24.9	N22	05.6
Beginning of southern limit of penumbra	16	27.2	W156	20.8	N 8	46.5
Beginning of southern limit of umbra	17	35.7	W179	24.9	N58	00.3
Beginning of centre line; central eclipse begins	17	40.9	E 178	27.8	N60	56.0
Beginning of northern limit of umbra	17	48.1	E 175	14.8	N64	56.7
End of northern limit of umbra	18	13.9	E 156	13.9	N78	52.2
End of centre line; central eclipse ends	18	21.2	E 142	52.7	N82	29.0
End of southern limit of umbra	18	26.4	E 123	51.2	N84	42.1
End of southern limit of penumbra	19	35.1	W 18	43.3	N43	55.5
⊙ Eclipse ends; last contact with Earth	20	02.8	W 23	14.0	N57	06.9