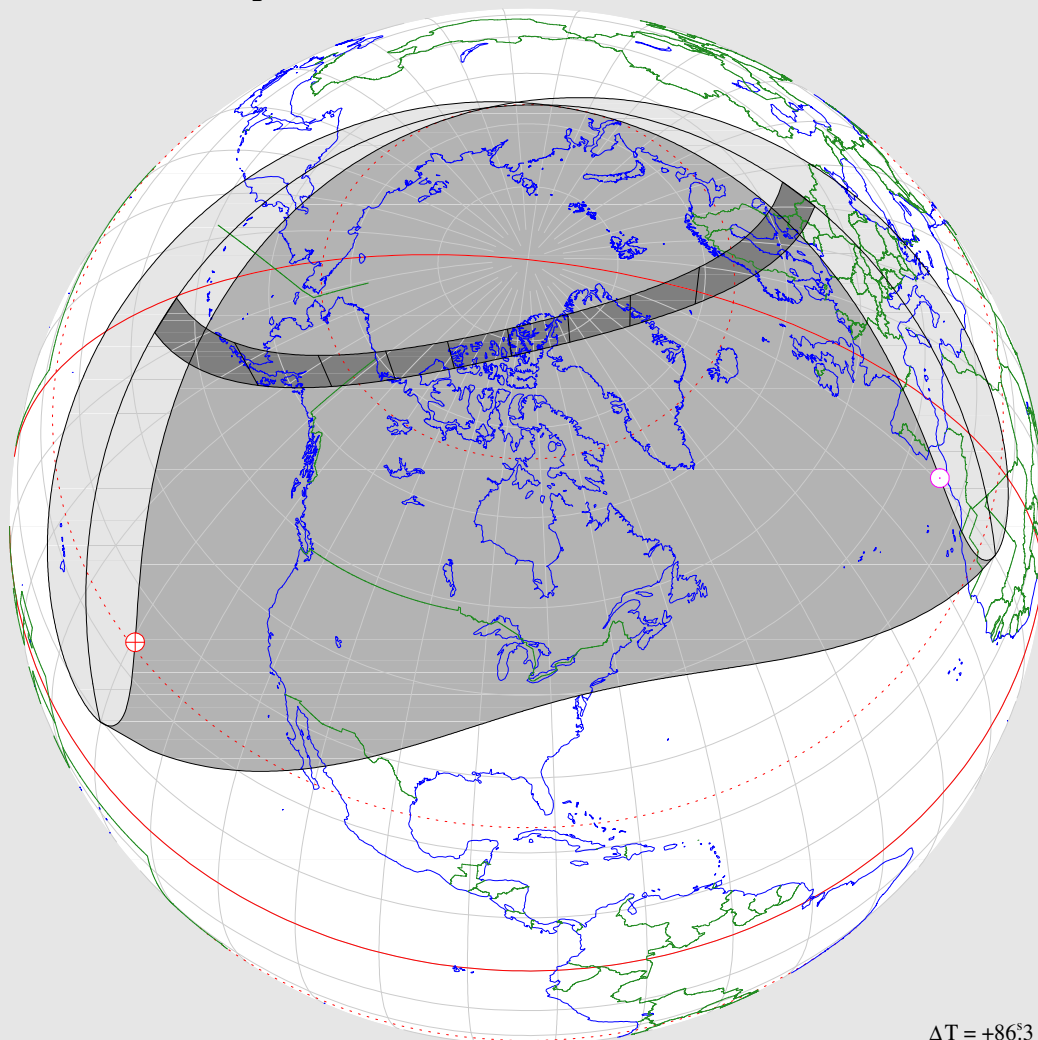


## II. - Annular Eclipse of the Sun

2039 June 21



©HM Nautical Almanac Office

$\Delta T = +86^s.3$   
Globe centred on W 83°3 and N 59°0

| Circumstances                                    | Time (UT) |      | Longitude |      | Latitude |      |
|--|-----------|------|-----------|------|----------|------|
|  | h         | m    | °         | '    | °        | '    |
| ⊕ Eclipse begins; first contact with Earth       | 14        | 34.9 | W139      | 31.7 | N24      | 14.9 |
| Beginning of southern limit of penumbra          | 15        | 05.5 | W140      | 07.6 | N 9      | 36.0 |
| Beginning of southern limit of umbra             | 16        | 02.8 | W174      | 52.5 | N43      | 53.5 |
| Beginning of centre line; central eclipse begins | 16        | 06.1 | W177      | 08.6 | N45      | 24.5 |
| Beginning of northern limit of umbra             | 16        | 09.6 | W179      | 37.4 | N46      | 58.9 |
| Central eclipse at local apparent noon           | 17        | 21.0 | W 79      | 47.6 | N80      | 24.1 |
| End of northern limit of umbra                   | 18        | 13.1 | E 36      | 22.8 | N55      | 33.6 |
| End of centre line; central eclipse ends         | 18        | 16.7 | E 33      | 12.3 | N54      | 10.7 |
| End of southern limit of umbra                   | 18        | 20.0 | E 30      | 20.0 | N52      | 49.7 |
| End of southern limit of penumbra                | 19        | 17.3 | W 9       | 51.2 | N19      | 50.3 |
| ⊙ Eclipse ends; last contact with Earth          | 19        | 47.8 | W 9       | 20.9 | N34      | 13.3 |