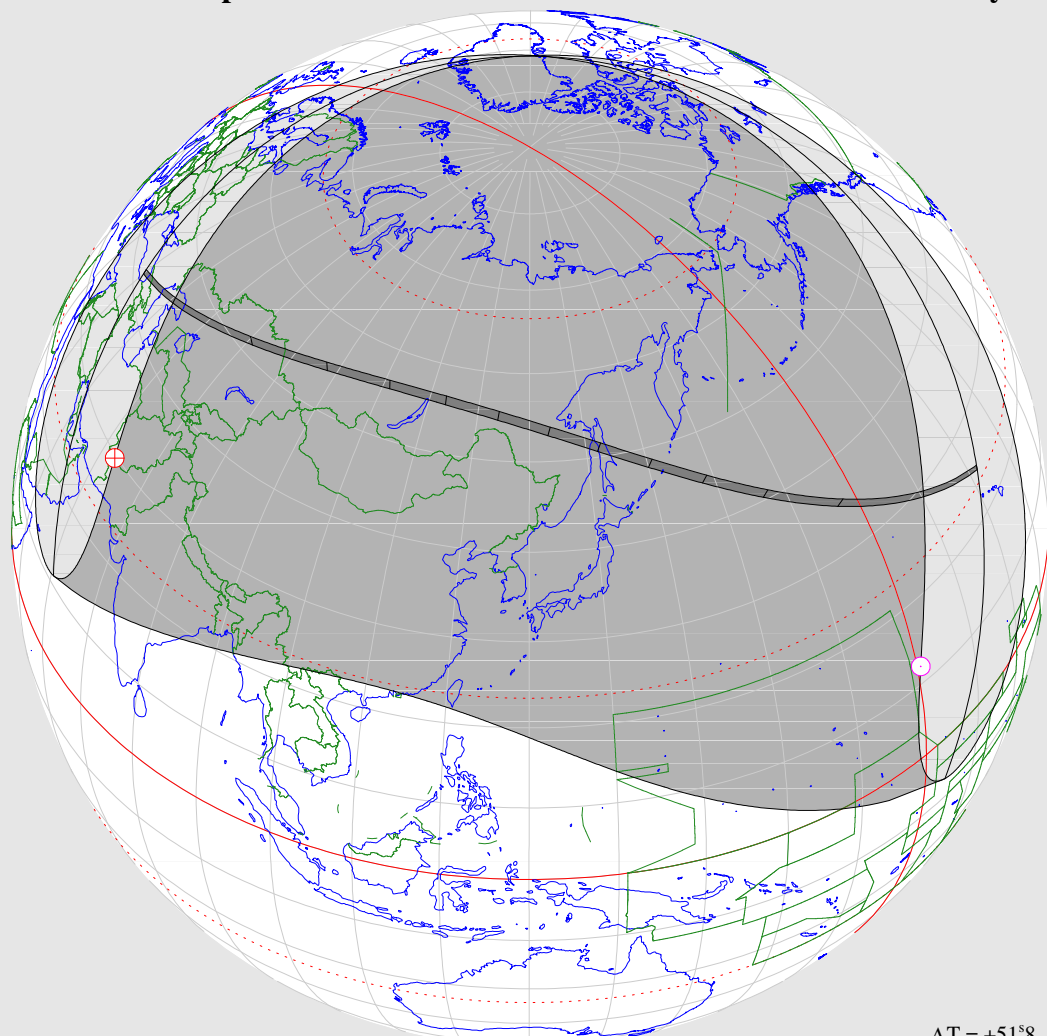


# IV. - Total Eclipse of the Sun

1981 July 31



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$\Delta T = +51^s.8$   
Globe centred on E 130°1 and N 42°6

| Circumstances                                    | Time (UT) |      | Longitude  | Latitude |
|--|-----------|------|------------|----------|
|  | h         | m    | ° /        | ° /      |
| ⊕ Eclipse begins; first contact with Earth       | 1         | 11.3 | E 62 54.0  | N29 39.2 |
| Beginning of southern limit of penumbra          | 1         | 49.1 | E 60 35.5  | N11 06.1 |
| Beginning of southern limit of umbra             | 2         | 17.5 | E 40 00.0  | N41 47.3 |
| Beginning of centre line; central eclipse begins | 2         | 17.8 | E 39 46.7  | N42 00.9 |
| Beginning of northern limit of umbra             | 2         | 18.1 | E 39 33.3  | N42 14.6 |
| Central eclipse at local apparent noon           | 3         | 35.5 | E 127 41.5 | N54 30.2 |
| End of northern limit of umbra                   | 5         | 13.5 | W157 54.0  | N25 04.8 |
| End of centre line; central eclipse ends         | 5         | 13.8 | W158 03.6  | N24 52.0 |
| End of southern limit of umbra                   | 5         | 14.1 | W158 13.0  | N24 39.3 |
| End of southern limit of penumbra                | 5         | 42.5 | W176 12.7  | S 6 33.3 |
| ⊙ Eclipse ends; last contact with Earth          | 6         | 20.4 | W179 25.9  | N12 11.0 |