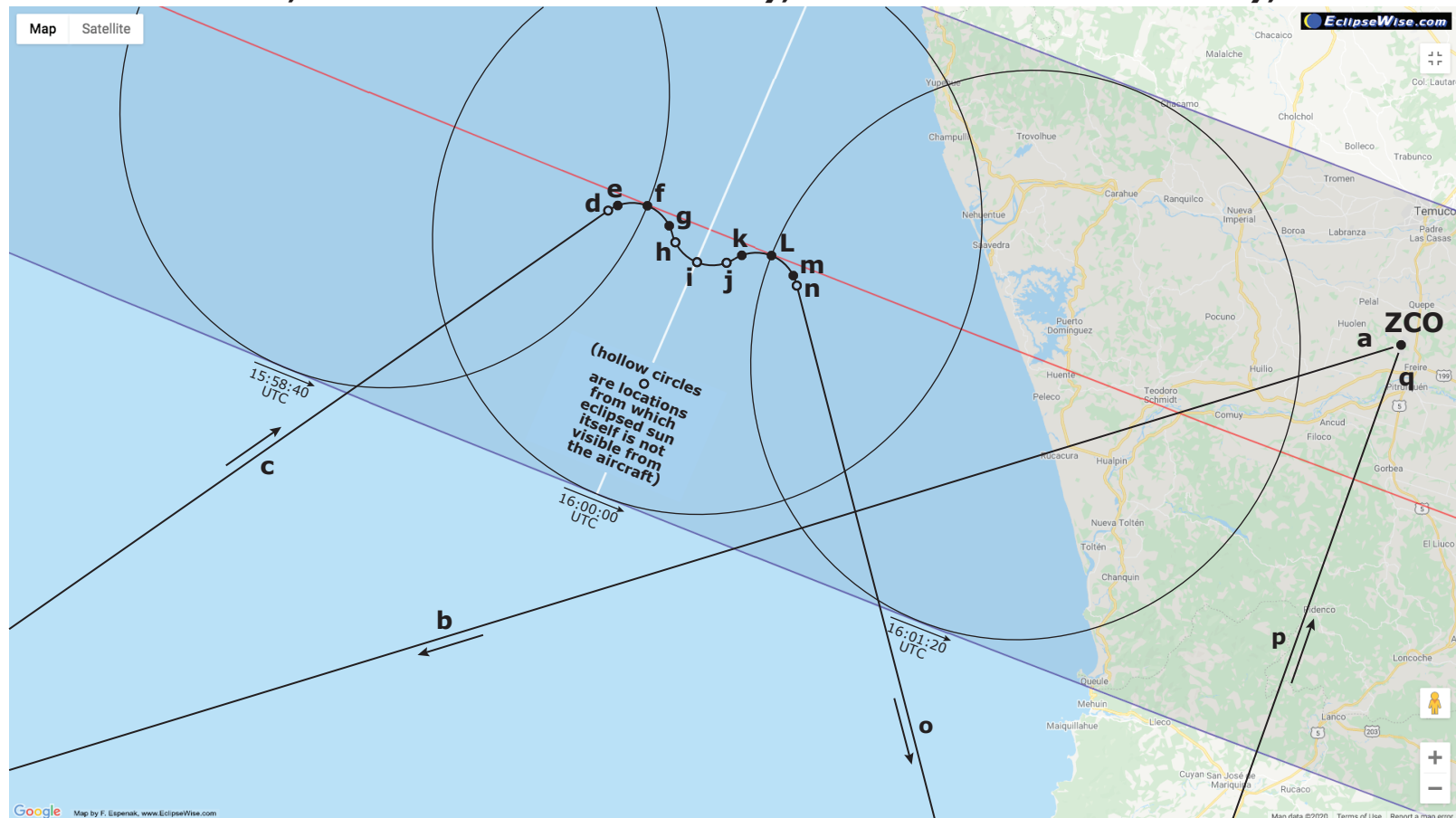


# Total solar eclipse 2020 December 14 triple-bank air-escape flight

...if necessary due to weather, 1.5 hours from and back to Temuco ZCO airport...  
for view of C2, first 30 seconds of totality, last 30 seconds of totality, and C3



If weather obliges us to observe this eclipse airborne, it will have to be as a triple-bank maneuver because of the high solar elevation of more than  $70^\circ$ . All three banks will be at inclinations of  $30^\circ$ , creating a turn rate of  $1.4^\circ$  per second for 60 seconds through a total horizontal turn arc of  $84^\circ$  each.

- a** Wheels-up ZCO 15:08:00 UTC = 12:08pm local.
- b** Flying west-southwest.
- c** 15:43:00-15:58:00 UTC. Straight-and-level flight for 15 minutes observing moon's shadow come over horizon to the west-northwest and then approach, approach, approach.
- d-e** 15:58:00-15:58:10 UTC. Transition from straight-and-level flight into clockwise bank no.1.
- e-f** 15:58:10-15:58:40 UTC. Observation of sun-moon during last 30 seconds before totality.

**f** 15:58:40 UTC. 2nd contact "straight out" the left-side windows at observer's solar elevation  $40.9^\circ = 70.9^\circ$  actual minus  $30^\circ$  bank.

**f-g** 15:58:40-15:59:10 UTC. First 30 seconds of totality.

**g-h** 15:59:10-15:59:30 UTC. Transition from clockwise bank no.1 into counterclockwise bank.

**h-i-j** 15:59:30-16:00:30 UTC. Counterclockwise bank including mid-eclipse intercept at **i** at its midpoint at 16:00:00 – eclipsed sun is not visible during this period, but can observe stunning horizon phenomena and panorama of progress of the lunar umbra.

**j-k** 16:00:30-16:00:50 UTC. Transition from counterclockwise bank into clockwise bank no.2.

**k-L** 16:00:50-16:01:20 UTC. Last 30 seconds of totality.

**L** 16:01:20 UTC. 3rd contact "straight out" the left-side windows at observer's solar elevation  $41.3^\circ = 71.3^\circ$  actual minus  $30^\circ$  bank.

**L-m** 16:01:20-16:01:50 UTC. Observation of sun-moon during first 30 seconds following totality.

**m-n** 16:01:50-16:02:00 UTC. Transition from clockwise bank no.2 back into straight-and-level flight.

**o** 16:02:00-16:17:00 UTC. Straight-and-level flight for 15 minutes observing moon's shadow recede, recede, recede and then disappear over horizon to the east-southeast.

**p** Flying north-northeast.

**q** Wheels-down ZCO 16:38:00 UTC = 1:38pm local.

**The airline has not reviewed this triple-bank plan yet, so it's subject to their evaluation and approval. We're calling this Plan A. If they request something more conservative, we'll present them with single-bank Plan B: view of 60 seconds of totality at mid-totality, no view of C2 or C3. (Graphic to come.)**