



Total Solar Eclipse 2017 USED BY PERMISSION © 2017 Miloslav Druckmüller, Zuzana Druckmüllerová, Jana Hodorová, Petr Štarha, Shadia Habbal

Still a few places available on solar eclipse airborne-intercept flight July 2, 2019 out of Easter Island aboard LATAM B787-9 Dreamliner ...8+ minutes in the moon's shadow

Closest we can come to space travel

...without, ourselves, having to qualify as astronauts...or as billionaires

by JOHN R. BEATTIE

AS THE 50TH ANNIVERSARY APPROACHES, this coming July 20, of humanity's first moon landing – by U.S.A.'s Apollo 11 astronauts Neil Armstrong and Buzz Aldrin – many of us wax nostalgic...oh, if only there were some way we, too, could become spacefarers!

We know that within the next few years, private space travelers may be able to fly such as with SpaceX or Virgin Galactic – but the waiting list is sure to be long and the price tag will be, literally as it were, astronomical...six, seven, or eight figures...thereby ruling out those of us who are "not yet working on our second billion".

But...what if we saw the dramatic solar eclipse in United States August 21, 2017, with up to 2 minutes 40 seconds of mid-day "nighttime", and decided that was actually pretty cool...a scale of interplanetary grandeur we were able to experience first-hand, ourselves, right here on earth.

What if we could see another total solar eclipse already this year in 2019.

And what if we could see the eclipse from a jetliner above more than 80% of earth's atmosphere i.e. in effect, more than 4/5 of the way to outer space, enjoying a cosmic perspective at 41,000 feet altitude with curvature of the earth visible as the moon's shadow transits across it. Now wouldn't that be extra cool...almost astronautically cool?

And what if, as a transcendent bonus, the eclipse were to be more than three times longer than the 2017 eclipse due to jetliner's speed of 488 knots in same direction as motion of the shadow, thereby slowing the shadow and giving us lots more time to observe and take in the eerie, other-worldly phenomenon.



By now you might have a hunch where this discussion is headed...and your hunch would be correct!

Because indeed a total solar eclipse will be taking place, this coming July 2 – almost seemingly as a run-up to the Apollo 11 anniversary which transpires only 18 days later! It will happen over the southeastern Pacific Ocean passing north of Easter Island at local noon and ending around sunset in Chile and Argentina with duration of up to 2 minutes 33 seconds for land-based observers in those two countries. But a chartered Boeing 787-9 Dreamliner from LATAM will be making a special eclipse airborne-intercept flight taking off from, and after-the-eclipse returning to, Easter Island – anticipating more than 8 minutes of daytime darkness visible out the left-side passenger windows!

And those Dreamliner windows are famously extra large and tall – the most expansive of any current passenger jet.

The charter organizer is California-based **TEI Tours & Travel**

(tei@teiglobal.com; from US\$6750 which can be shared among 1, 2, or 3 persons; plus international airfare to Chile and Easter Island), with technical planning by Dr. Glenn Schneider.

Envision this if you can: here we are in our Dreamliner north of Easter Island, leveled off flying west-to-east, and here comes the moon's shadow over the western horizon behind us, 10-15 minutes before it reaches us. The sky at this cruising altitude is deep blue-violet all the time anyway, and as light from the sun decreases, becomes even inkier-dark and more outer-spacelike, and crystalline clarity of the thin atmosphere so high up is razor sharp. Now the shadow is only 5 minutes behind us, glowering upon us, devouring cloud decks over the ocean below...now

a "2019 space odyssey" exclusively our own for more than 8 minutes

3 minutes, now 2 minutes, now 1 minute...as the sun dwindle to a narrow blazing arc and planets Mercury and Venus flash into view...now...now...totality! The sun, completely covered by the moon, has become a black, charcoal-like ball with radiant halo of white streamers of ethereal solar atmosphere known as the "corona" extending way out; see also pink-orange glowing flamelike bits known as "prominences" curving around the dark limb. Note everything is progressing at a leisurely pace, much slower than what we saw in August 2017, so this time we aren't nearly as rushed and can take our time checking out all the amazing aspects of this alignment of sun, moon, and earth...a "2019 space odyssey" exclusively our own for more than 8 minutes, since we're the only earthlings seeing the event at this point in time, midway along its oceanic path, during its mid-day phase well before its late afternoon arrival on the coast of Chile and into Argentina.

The lunar umbra glides over us leaving golden light at its fringes in all directions changing, variegating, minute by minute.

Look that way – darkened cumulus clouds silhouette themselves against the horizon which glows beyond them. Look the other way – phantasmic coronal light reflects off the ocean's surface visible among gaps in the clouds below us. Ah now, cross

to the unoccupied right side of the aircraft cabin and see the shadow on the side away from the sun, its curved edge ponderously progressing as it inexorably outraces our winged observation post...now back to the left side and take in everything some more because we have so much abundant time to enjoy all this!

When at last our 8+ minutes expire and the shadow passes us and the brilliant sun begins to come back into view, we will rejoice in knowing that, although we have not been able to visit the moon as Neil and Buzz did half a century ago, we have done the next best thing...we have rendezvoused with the moon's shadow!

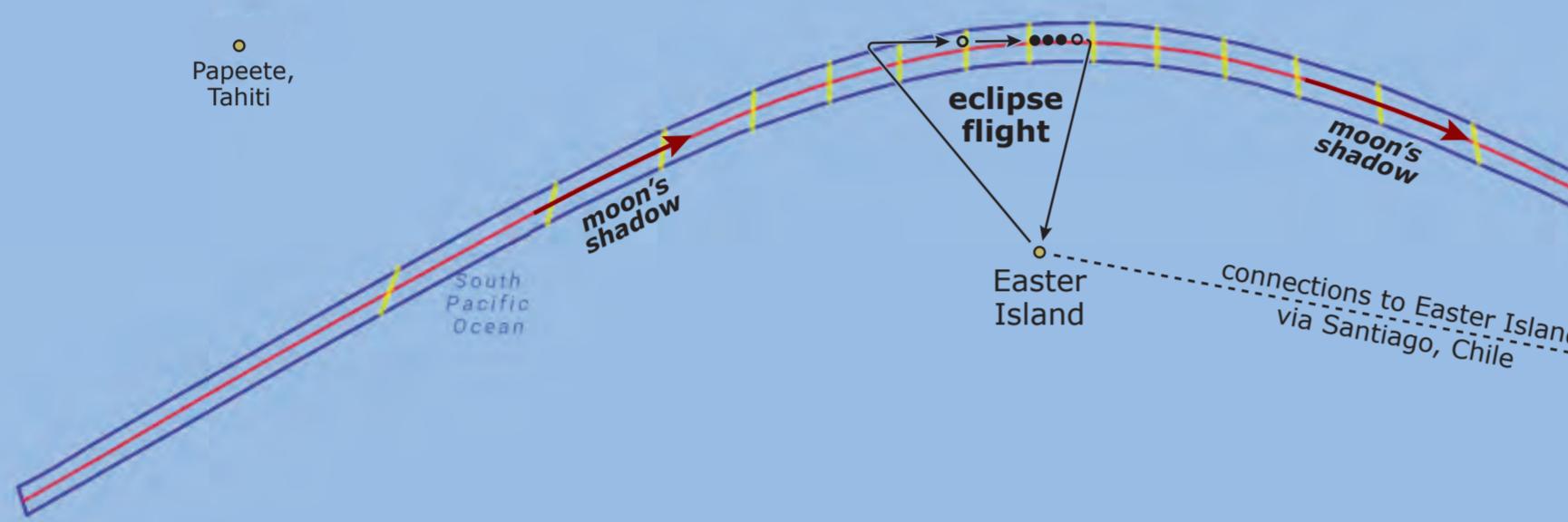
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A good friend of ours met Neil on board the S.S. Canberra eclipse cruise off the coast of western Africa, just after everyone on board observed the 5 minutes 45 seconds totality of June 30, 1973.

She asked, "Neil, how did seeing the total eclipse compare with standing on the moon?"

She reports that, as he sipped his brew, one arm around a pole in the lounge, he carefully took a few moments to ponder his answer, until replying: "Mary...it was right up there!"

Total solar eclipse flight 2019 July 2 Tuesday

- 8+ minutes of totality on LATAM Boeing 787-9 airborne-intercept charter flight from Easter Island back to Easter Island.
- West-to-east travel of aircraft on the eclipse path will lengthen totality from otherwise maximum of 4m33.0s for a stationary observer on surface of the ocean below.
- We will use the sun-facing left-side windows for eclipse viewing: 14 windows assigned to left-side seat rows 1-5 in business class, and 29 left-side window seats in economy rows 12-28, 31-40 and 42-43. Compared to a "normal" complement of 304 passengers, the EFLIGHT 2019-MAX cabin will be largely empty and uncrowded with plenty of room for eclipse viewers.
- Anticipated duration of flight will be 4h15m.
- Transportation to and from Easter Island will be via Santiago, Chile on any regularly scheduled daily commercial flights of participants' choosing on LATAM, the Chilean airline – allowing Easter Island touring before and/or after our moonshadow rendezvous.



Contact TEI Tours & Travel, tei@teiglobal.com, +1 925-825-6104

For additional details see: www.tinyurl.com/EFLIGHT2019A
www.tinyurl.com/EFLIGHT2019B
www.tinyurl.com/EFLIGHT2019C



Eclipse predictions by Fred Espenak, NASA/GSFC Emeritus

Eclipse flight intercept planning and computations by G. Schneider

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Blue path of totality shown here is for sea level. Points B C D E F, the "totality run", show Dreamliner's intercept along eclipse path at 41,000-feet altitude, displaced 5.7 nm north from the sea-level path centerline (red) because sun is almost exactly due north at 49.6 degrees elevation. Aircraft's mid-intercept at point D is at location of maximum duration along the eclipse path: 4 minutes 33 seconds on surface of the ocean below, but more than 8 minutes aloft because of the jetliner's eastbound speed = 488 knots.

