Dear Foster,

Sorry, but I don't think your plan a good one. The two absolute determinations refer to particular pillars set up in laboratories, and any reduction to sea level (which can be made in several different ways) would defeat their object. Their purpose is to set up a standard, so that if we want absolute gravity at, say, Seattle, we can swing a pendulum on the Washington pillage and say it is the same elevation. You see how much it differs. The point of Ballard & Browne's correction for height is that Rayleigh's pendulum was not at the normal height for ordinary geodetic work, but at 24° N.

But it is a retrograde step to use two stations differing by only 7° in latitude to extrapolate over a range of 180°. It is unclear whether for
the mean (with approximate correction for height) is to denote by \( \pm 22 \) mgal for the elliptic formula. So at the best we have no right to expect the pole-squarer difference inferred from Washington & Teddington alone to be right to 150 mgal. The standard error of this difference, using all the available data, is only 4 mgal. That is, I don't think your proposed summary means anything particular, and may easily be misinterpreted. The method is certainly so that no geodetic would accept for a moment. If you are aiming at the highest accuracy possible at the moment, the best plan is to reduce my final formula by 17 mgal; but if you want a conventional formula the best is the one actually used in practice for comparisons at 286,000 stations in Heiskanen's list, namely the international formula.

I am not sure whether you realize the trivial importance of absolute gravity to this accuracy for the
geographical point of view. Its chief effect would be a correction of 6 parts in 10^6 to the non-dynamical parallels, which is unattainable to about 1 in 10^7, and it would affect reciprocally the mean density of the earth, about which we have no other source of information. Differences of gravity from place to place are needed to this accuracy before various theories can be properly compared, but the mean value is much less important. Its real use is in standardizing electrical units, which depend ultimately on measuring force by weighing it, and there a error of 10^-5 does matter. But may reality is the place for this matter than a collection of tables mainly for biologists!

Yours sincerely

[Signature]