My 2016 review of Goldstein PhL 11.12.16

1. Started review of Goldstein on 9.16, but had to digress after Ch 2 to rewrite Lagrange Doc.

I started on this effort Sept 16, 2016. Got bogged down on the "virtual displacement" business in Chapter 2. Found the "two Indians" paper on this subject on 9.18. Realized that my Lagrange document of 6.20.15 makes no mention whatsoever of the use of multipliers in mechanics, and I felt this was a bad omission. Wrote App C on intersection of constraint surfaces. On 9.23 started App D on this missing mechanics multipliers stuff. On 9.28 found the newer edition of the Indians paper which included non-holonomic constraints. On 9.29 I finished my review of Goldstein Ch 1 and started into Ch 2. On 10.2 finished Goldstein Ch 2 and started on a full edit cycle for Lagrange doc. First draft done 10.4. On 10.5 I realized that the main approach of Lagrange doc was "illogical" and I pulled it from both Xmission and Rgate. My main purpose of a "solid derivation" was not solid. Started basically a complete rewrite of Lag doc, reusing the old matrix material in a later Section. Lots more work on the Boltzmann stuff, now have Maxwell distribution. On 10.22 have draft of this new version of Lag doc. On 10.25 released new version to Xm and Rg. New release on 10.29.

2. Resume on 10.28, but had to digress on the brachistochrone problem which I had done wrong.

This subject now has its own folder with two docs and other stuff in Physics/ Mechanics.

3. Start into Goldstein Ch 3 on orbits on 10.31, but digressed to write Euler doc.

I encountered the integral of $1/\sqrt{R}$ in Goldstein and realized I did not know how to do such integrals. I had an earlier pencil note that the sign was wrong, so I just wanted to verify this. This led to Euler doc which I worked on from 11.1 to 11.11 doing several releases to get out the errata.

4. Resume Goldstein Ch 3 on 11.12

Today 11.12 I read my notes on this chapter and the meta review. Not very exciting today, lots of history here starting with Copernicus, Kepler, Galileo and Brache in 1600 time frame, looking at those mysterious planets. Kepler's first law is "ellipse!".