On Hubbles Law GREG HOOD, Retired (MIT) — As Photons travel from distant galaxies, they lose energy as revealed by an increase in wavelength. The Doppler effect says the recession speed of the source is related to this energy loss. Hubble's law tells us that the recession speed is directly proportional to the source distance. Therefore, the photon energy loss is directly related to the source distance. Unexpectedly, the recession speed acts like scaffolding – once the structure is built, the scaffolding is no longer needed. Adopting Occam's razor, the above conclusion – photon energy loss is directly related to source distance - is the real import of Hubble's law. It follows mathematically, without any added assumptions, that the energy loss is due to a universal constant deceleration, $- cH_0$. The deceleration, "alpha", has a magnitude of 0.693nm/s^2, and may be related to the Pioneer anomaly, since the deceleration there, 0.874nm/s^2, is of the same order of magnitude. More importantly, a link exists between Alpha and Milgrom's constant acceleration, a_0, used in the MOND theory: in magnitude, $a_0 \approx \alpha/2\pi$. This connection suggests that to understand galactic and inter-galactic physics, a universal constant of acceleration is required. Applying acceleration Alpha to Newton's Second Law leads necessarily to non-Keplerian velocity curves similar to those found in spiral galaxies, and predicts that objects in orbit at the outermost regions of a galaxy should have much higher velocities than allowed by standard theories.

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