Abstract Submitted
for the CAL13 Meeting of
The American Physical Society

A second high energy Hawking radiation predicted JACK SARFATTI, Internet Science Education Project — Hawking's horizon surface area-entropy A black body radiation peaks at wavelength $\sim A^{1/2}$ $\sim$Unruh temperature T^{-1}. I predict a second higher Unruh temperature component with peak wavelength $\sim$ proper quantum thickness of the horizon $\sim(LA^{1/2})^{1/2}$ with energy density $\sim T^4$ $\sim hc/L^2A$. The two Hawking surface and thickness radiations form a Carnot heat engine. $L = L_p$ corresponds to random black body gravity waves. $L \sim h/m_e c$ for virtual electron-positron pairs stuck to the horizon corresponds to thermal photons. These apply both to observer independent black hole horizons as well as observer-dependent past and future cosmological horizons bounding the causal diamond. For gravity wave Hawking thickness radiation $hc/{L_p}^2A$ is the observed dark energy density if we use the future deSitter horizon entropy A. The Unruh effect suggests that the w = + 1/3 black body radiation for accelerating detectors corresponds to w = -1 for the distant local inertial frame detectors.

Jack Sarfatti
Internet Science Education Project

Date submitted: 20 Aug 2013 Electronic form version 1.4