Abstract Submitted
for the NWS06 Meeting of
The American Physical Society

Energy Transitions of Single Bubble Sonoluminescence SARAH NEAL, CHRIS CASASNOVAS, MATTHEW EGGERS, The Evergreen State College — Acoustic cavitation and collapse of a solitary gas bubble in an otherwise degassed liquid medium results in photon emissions. The mechanism triggered by this collapse, which leads to the emission, is unknown. This photon emission lasts only pico- seconds and is often very faint. If the light emitting transition occurs on the surface of the bubble rather than the bubble cavity, then the polarity and surface tension properties of the medium will effect the emission. Light data will be collected via a photo-multiplier tube to mathematically isolate the effects for varying surface properties of bubbles in varying mediums. We intend to measure energy transitions of the medium via spectroscopy and temperature differentials using an experimental design described by Hiller and Barber in the article "Producing Light from a Bubble of Air" in Scientific American, Feb. 1995.

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Date submitted: 24 Apr 2006 Electronic form version 1.4