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The search for Planck scale effects is one of holy grains of physics. At Fermilab, a system of two Michelson interferometers (MIs) was built for this purpose: the holometer. This device operates using classical light, and, therefore, its sensitivity is shot-noise limited. In collaboration with the Danish Technical University, we built a proof of principle experiment devoted to experimentally demonstrate how quantum light could improve the holometer sensitivity below the shot noise limit. It is the first time that quantum light is used in a correlated interferometric system. In particular the injection of two single mode squeezed state (one in each interferometer) and of a twin-beam state is considered, and the system performance compared in the two cases. In this proceeding, after a general introduction to the holometer purposes and to our experimental set-up, we present some characterization measurements concerning the quantum light injection.