This project will characterize the performance of an eight-pixel single photon avalanche diode (SPAD) array when read out by a PicoQuant HydraHarp 400 timing correlator. Specifically, we will test whether all eight pixels of the diode have the same or similar sensitivity. We will also verify that the timing histograms are flat when viewing uncorrelated light. Finally, we will determine whether any instrumental signatures are repeatable. Southern Connecticut State University (SCSU) was recently awarded a grant by the National Science Foundation for SCSU's project titled "Portable Multi-Channel Intensity Interferometer" with Dr. Elliott Horch serving as Principal Investigator. The project, which began around two years ago, involves the attempt to build the first portable intensity interferometer using a single-photon avalanche diode (SPAD) and a picosecond timing correlator. Since the inception of the project, two SPAD detectors were acquired from Micro Photon Devices. A PicoQuant PicoHarp 300 timing correlator and two 24-inch SpicaEyes telescopes have also been purchased for the project, and astronomical interferometric observations have been taken with the SPAD detectors connected to the telescopes. Thus far, data has been obtained using single-pixel SPAD detectors and a dual-channel timing correlator. SCSU has subsequently obtained an eight-pixel SPAD from the Politecnico di Milano and an eight-channel PicoQuant HydraHarp 400. The use of an eight-pixel SPAD read out by an eight-channel timing correlator will help make the interferometric observations more efficient, along with other potential advantages such as multichromatic measurements if so desired.