Time-Resolved Detectors for Quantum Ghost Imaging

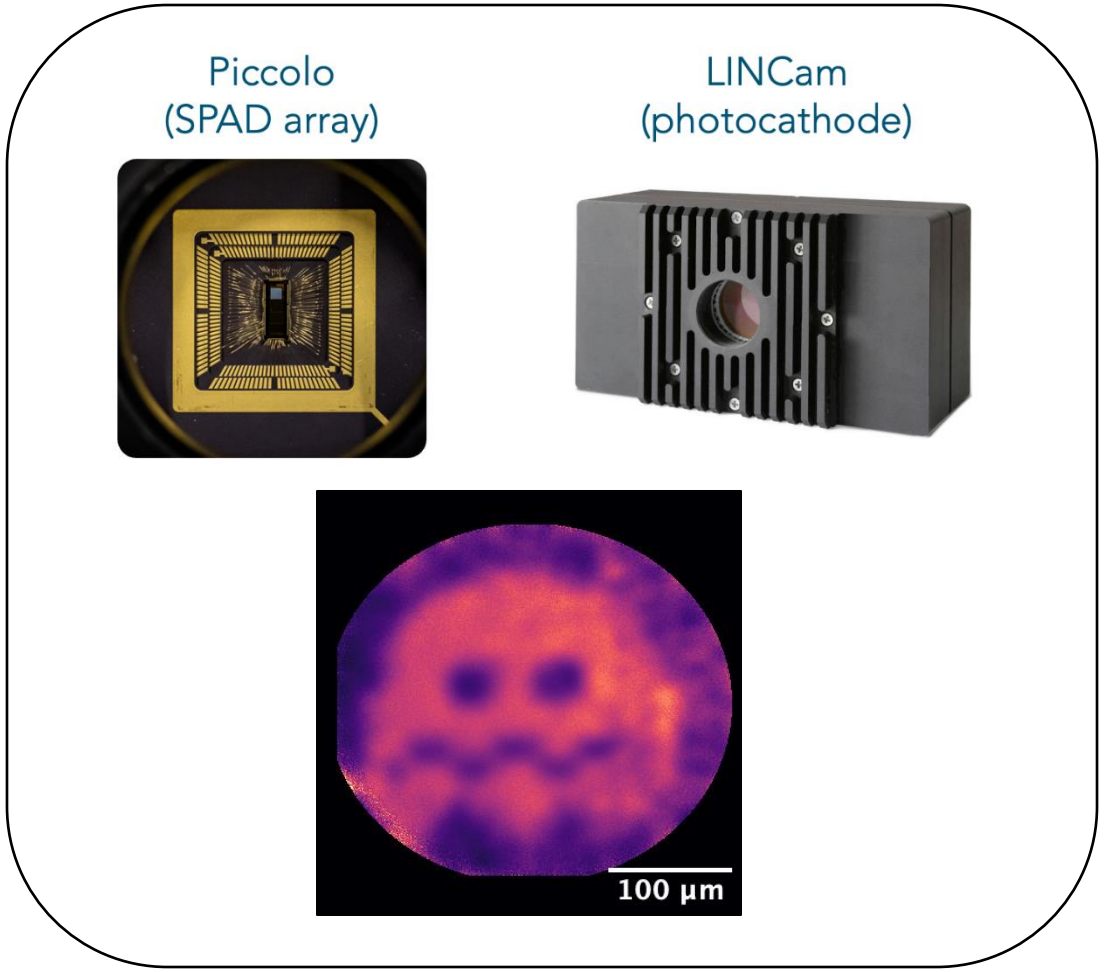

Figure: The two sensors (top), Piccolo and LINCam, are single-photon sensitive detectors with very different performance capabilities. However, both can generate quality images (bottom) in quantum ghost imaging applications.

Scientific Achievement

Demonstrated that SPAD array and photocathode detector imaging sensors can generate ghost images at 1Hz frame rates, expanding the technique to biologically relevant time scales.

Significance and Impact

Cutting-edge sensors that can produce images from single photons are becoming available. These sensors will be necessary for new quantum imaging applications.

Research Details

- Photocathode sensors produce higher quality images.
- SPAD arrays capture faster dynamics.
- Both can be used in quantum ghost imaging

Work was performed, in part, at the Center for Integrated Nanotechnologies.

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