



# Light from ancient quasars helps confirm quantum entanglement



Last year, physicists provided strong support for quantum entanglement, the seemingly far-out idea that two particles, no matter how distant from each other in space and time, can be inextricably linked, in a way that defies the rules of classical physics. In the 1960s, the physicist John Bell calculated a theoretical limit beyond which such correlations must have a quantum, rather than a classical, explanation. Now, a National Science Foundation-funded team has vastly extended the case for quantum entanglement and further restricted the options for the freedom-of-choice loophole. The researchers used distant quasars, one of which emitted its light 7.8 billion years ago and the other 12.2 billion years ago, to determine the measurements to be made on pairs of entangled photons. They found correlations among more than 30,000 pairs of photons, to a degree that far exceeded the limit that Bell originally calculated for a classically based mechanism.

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