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STRANGE OPTICAL PULSES IN STARLIGHT FROM HD89389 AND HD217014

Abstract

Years spent searching 1200 sun-like stars for SETI signals in fast multi-color optical photometry have finally yielded interesting, unexpected results. A "signal" of two fast pulses, separated by 4.5 seconds and unlike anything previously seen, was discovered in light from of HD89389. Close examination reveals that several unique features of the first pulse are repeated almost exactly in the second. Comparison of this pair with other known "signals" such as those produced by airplanes, satellites, meteors, lightning, atmospheric scintillation or system noise, emphasized their uniqueness. During the reexamination historical data, another pair of similar pulses was found in an observation of HD217014 that four years earlier that had been dismissed as "birds". After examining these pulses in detail and showing that they could not have been made by birds or other known source, a theory is proposed to explain them based on distant objects moving through the incoming starlight. If this theory is correct, an array of synchronized optical telescopes on the ground could provide the additional data needed to estimate the distance, velocity and possibly the size and shape of similar objects detected in the future.