abstract We describe Chandra, HST, and radio observations that reveal a radio-quiet but magnetospherically active neutron star in the error circle of the high-energy γ-ray source 3EG J1835+5918, the brightest of the unidentified EGRET sources at high Galactic latitude. A Chandra ACIS-S spectrum of the ultrasoft X-ray source RX J1836.2+5925, suggested by Mirabal & Halpern as the neutron star counterpart of 3EG J1835+5918, requires two components: a blackbody of $T_\infty \approx 3 \times 10^5$ K and a hard tail that can be parameterized as a power law of photon index $\Gamma \approx 2$. An upper limit of $d < 800$ pc can be derived from the blackbody fit under an assumption of $R_\infty = 10$ km. Deep optical imaging with the HST STIS CCD failed to detect this source to a limit of $V > 28.5$, thus $f_X / f_V > 6000$ and $d > 250$ pc assuming the X-ray fitted temperature for the full surface. Repeated observations with the 76 m Lovell telescope at Jodrell Bank place an upper limit of $< 0.1$ mJy on the flux density at 1400 MHz for a pulsar with $P > 0.1$ s, and $< 0.25$ mJy for a $\sim 10$ ms pulsar at the location of RX J1836.2+5925. All of this evidence points to an older, possibly more distant version of the highly efficient γ-ray pulsar Geminga, as the origin of the γ-rays from 3EG J1835+5918.