Deciphering the Quantum Vacuum JOHN POLASEK, APS — Our investigation finds that the quantum vacuum is a dense matrix of e-p+ pairs, together with their exact spacing and other characteristics. The extreme density forces us to conclude that the quantum vacuum is actually a solid space beyond the vacuum, accessible only to electric fields. Among other data we identify a least distance and a highest frequency to alleviate renormalization problems in quantum electrodynamics. The overall findings point to a total revision of physics.