We have shown how a variety of small existing and hypothetical inverse beta decay detectors can measure the incoming direction of electron-antineutrinos. At few meter distances from the core, one may study the rate, burnup and source angular distribution of neutrinos. Furthermore, we have proposed a detector design that shows promise for substantially improving the angular resolution of measurements within a reasonable timescale. Assuming a conservative 10% detection efficiency for a 1-ton-scale detector could achieve this resolution at a standoff of 10 m from a 20 MWth reactor within a detector operating time of less than 48 hrs. Angular neutrino source resolution is no doubt practical in proximity to a reactor (and has been accomplished by some such as PROSPECT at ORNL). More interesting is the case for finding unknown reactors at ranges of 10-100 km. The 10-km scale will require fiducial volumes of order several tens of tons, and 100~km will require a kiloton fiducial volume. Combining the direction-finding and range-finding (via inverse Fourier spectrum), we see that at least in principle, one may achieve blind recognition of a reactor's existence, azimuth, distance and power. While not an easy task, it is a remarkable capability unique to neutrinos, the only stable elementary particles which ``know'' their point of origin!