Two distinct electronic sites in the Cu-O plane of the (La, Sr)CuO(4) pseudogap state ROBERT SMITH, PHILIP KUHNS, ARNEIL REYES, GREGORY BOEBINGER, NHMFL/FSU — At intense magnetic fields (30 T) $^{17}$O NMR exhibits two distinct signatures for planar oxygen sites instead of the singular site expected from the identical lattice symmetry at oxygen sites in the copper-oxygen plane for underdoped, orthorhombic La$_{2-x}$Sr$_x$CuO$_4$. Analysis of Knight shift, linewidth, quadrupolar splitting and spectral asymmetry indicates that roughly 75% of the planar oxygens evidence antiferromagnetically correlated nearest neighbor Cu moments at temperatures below $\sim$30 K, consistent with previous reports. A second planar oxygen site first observed in this study shows that there are mobile holes on roughly 25% of the planar oxygen sites that (a) suppress magnetism for all $T<300$K and (b) show a Knight shift that drops to zero below $\sim$60 K, evidencing pair formation at a temperature well above the superconducting transition temperature ($\sim$4 K at 30 T) and more than twice the superconducting transition temperature at zero magnetic field.