(f)Quasar Luminosity Functions in Host Halo Mass bins  $13 < \log M_{
m peak} < 14$ All SMBHs  $10^{-6}$  $11 < \log M_{
m peak} < 12$  —  $14 < \log M_{
m peak} < 15$  $12 < \log M_{
m peak} < 13$ [Mpc Density 10<sup>-10</sup>. Number 10<sup>-14</sup> z = 10.0 $10^{43}$  $10^{48}$  $10^{44}$  $10^{45}$  $10^{46}$  $10^{47}$ Bolometric Luminosity [ergs s<sup>-1</sup>]