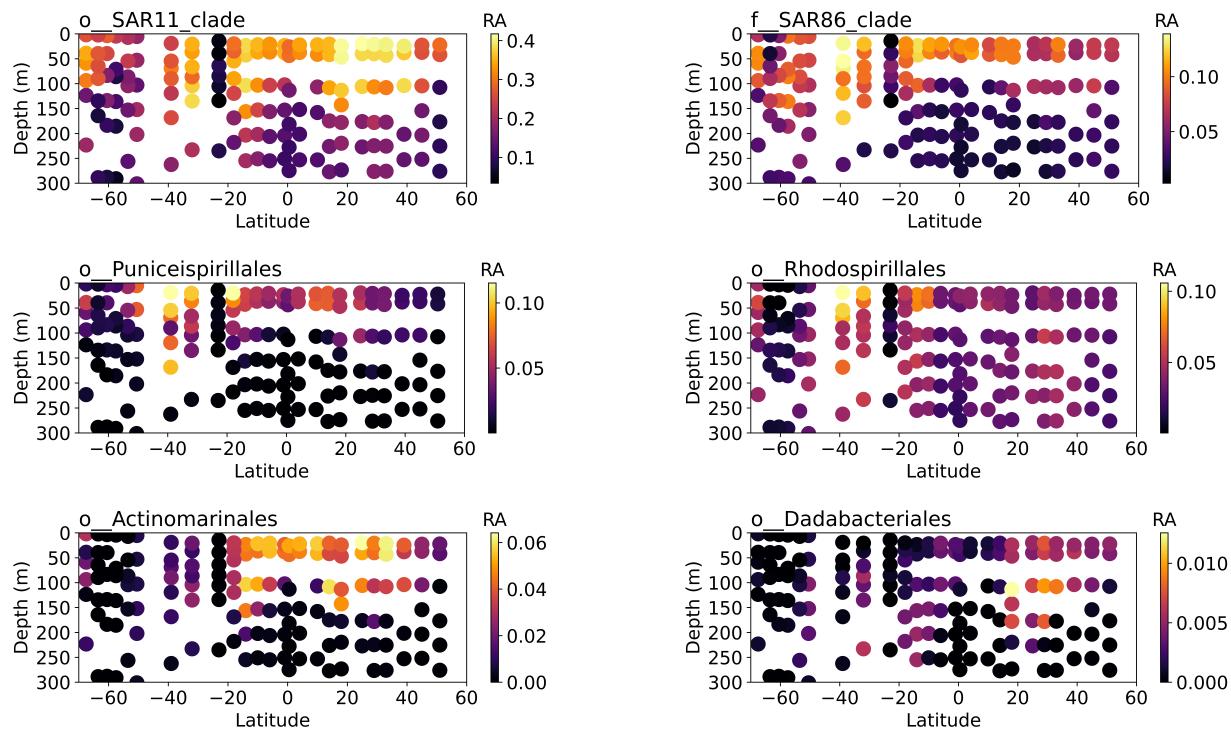
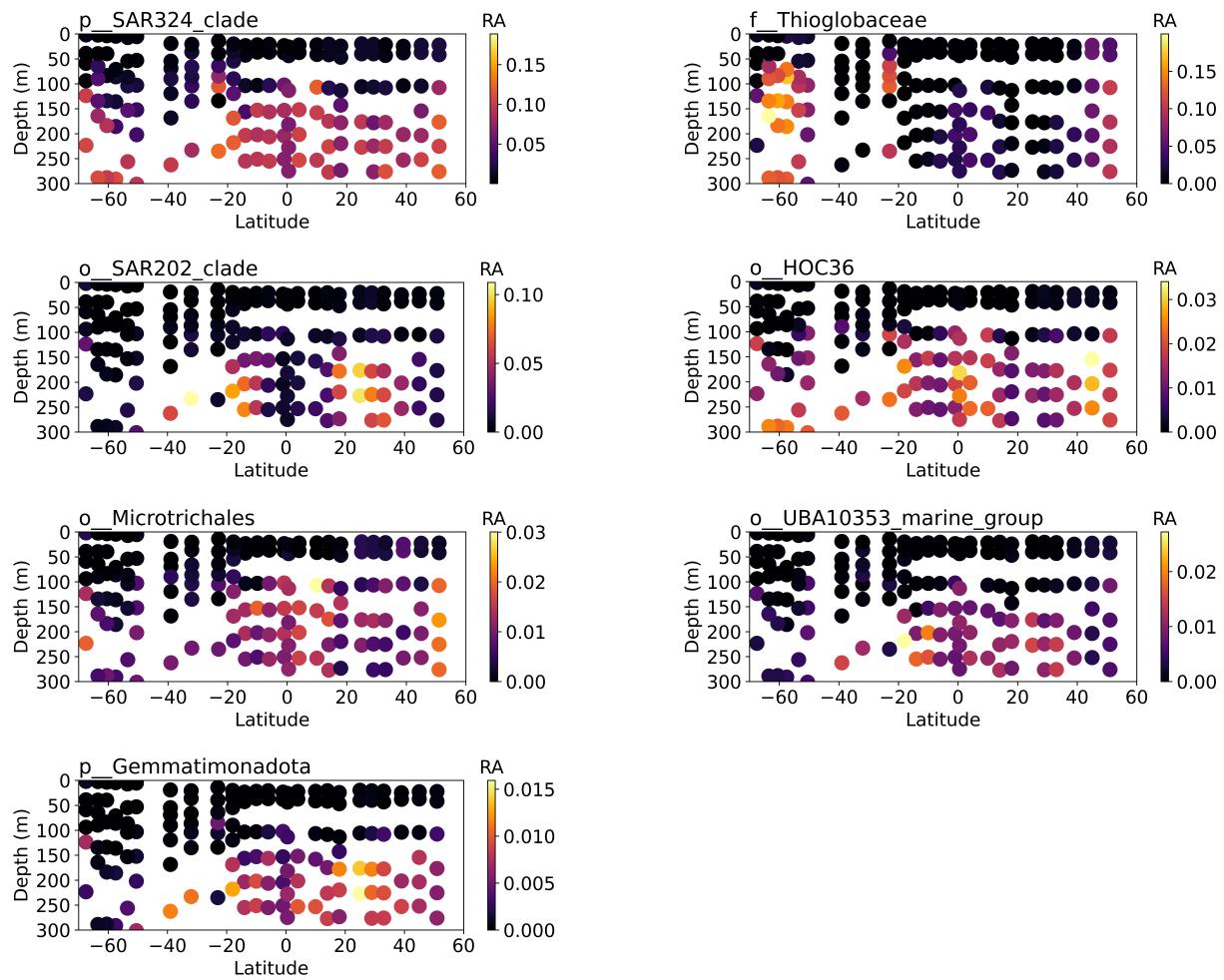


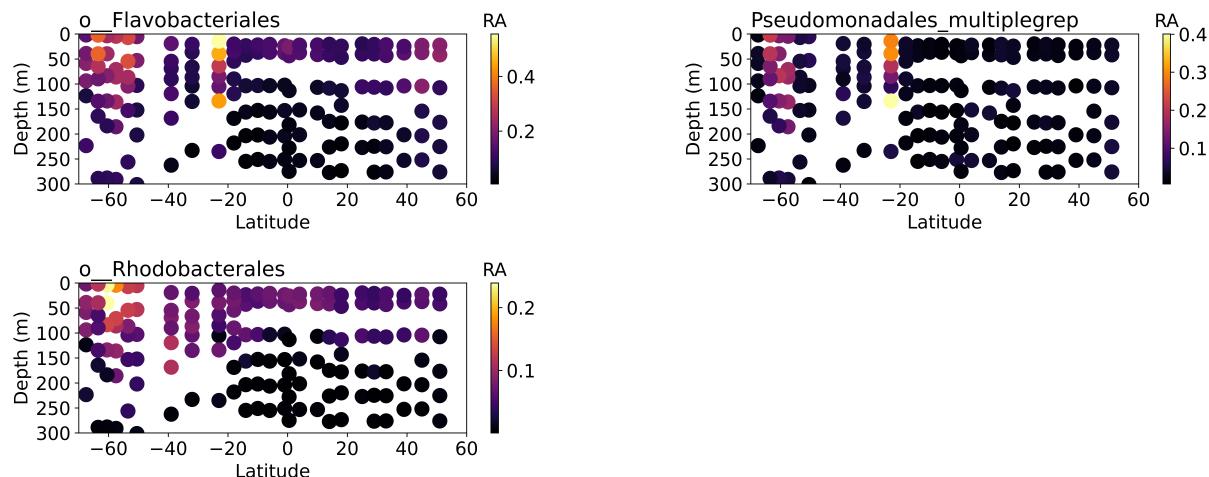
**Figure S8:** The fraction of the non-photosynthetic prokaryotic community covered by the 21 guilds plus the two nitrifier guilds. Average coverage across the 195 sampling sites is 92%.



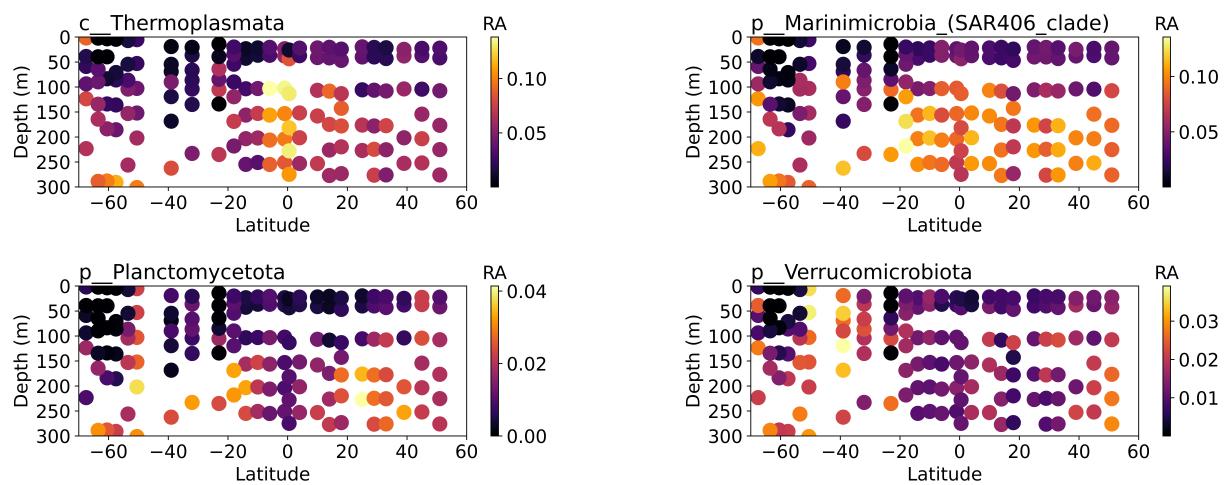
**Figure S9:** The subset (6) of the 21 picoautotrophic taxonomic guilds with peak relative abundances across the surface, ubiquitously, and predominantly at lower latitudes (roughly 40°N to 40°S).



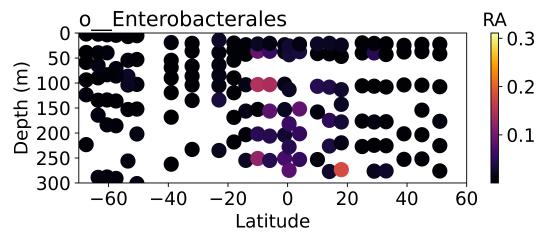
**Figure S10:** The subset (7) of the 21 picoheterotrophic taxonomic guilds with peak relative abundances in the deep ocean with little abundance in the surface.



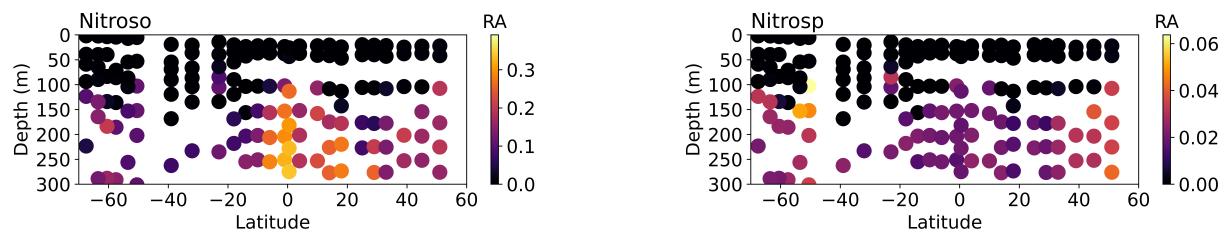
**Figure S11:** The subset (3) of the 21 picoheterotrophic taxonomic guilds with peak relative abundances at high latitudes (here, just the Southern Ocean, since that area was sampled during the productive summer season, unlike the higher northern latitudes).



**Figure S12:** The subset (4) of the 21 picoheterotrophic taxonomic guilds with relatively ubiquitous relative abundances, peaking at depth in general but also with more substantial relative abundances in the surface than those in Fig. S11. These distributions match most closely with the modeled consumers of particulate organic matter.



**Figure S13:** The subset (1) of the 21 picoheterotrophic taxonomic guilds with peak relative abundance in the deep equatorial region.



**Figure S14:** Ammonia-oxidizing (keyword “Nitroso”) and nitrite-oxidizing (keyword “Nitrosp”) guilds.