



Fig. S4. Phylogenetic distribution of genes associated with light adaptation. The phylogenetic tree is a subtree of the genomic tree in Fig. 1 from which low-quality genomes were pruned. Gray triangles on the tree denote outgroups. The colored dot on the terminus of the branch presents the isolation source habitat of the genome. The inner ring depicts the copy numbers of genes associated with phototaxis.

The outer circle plots the presence of genes involved in light-harvesting complex assembly. Phycobilisomes composed mainly of the phycocyanin pigment (PC) encoded by the *cpcA* and *cpcB* genes are effective in absorbing red light, phycobilisomes rich in the phycoerythrin pigment (PE) encoded by the *cpeA* and *cpeB* genes are better at absorbing green light, and antennas composed of prochlorophyte chlorophyll-binding protein (*pcb* genes) exhibit enhanced absorption of blue light.