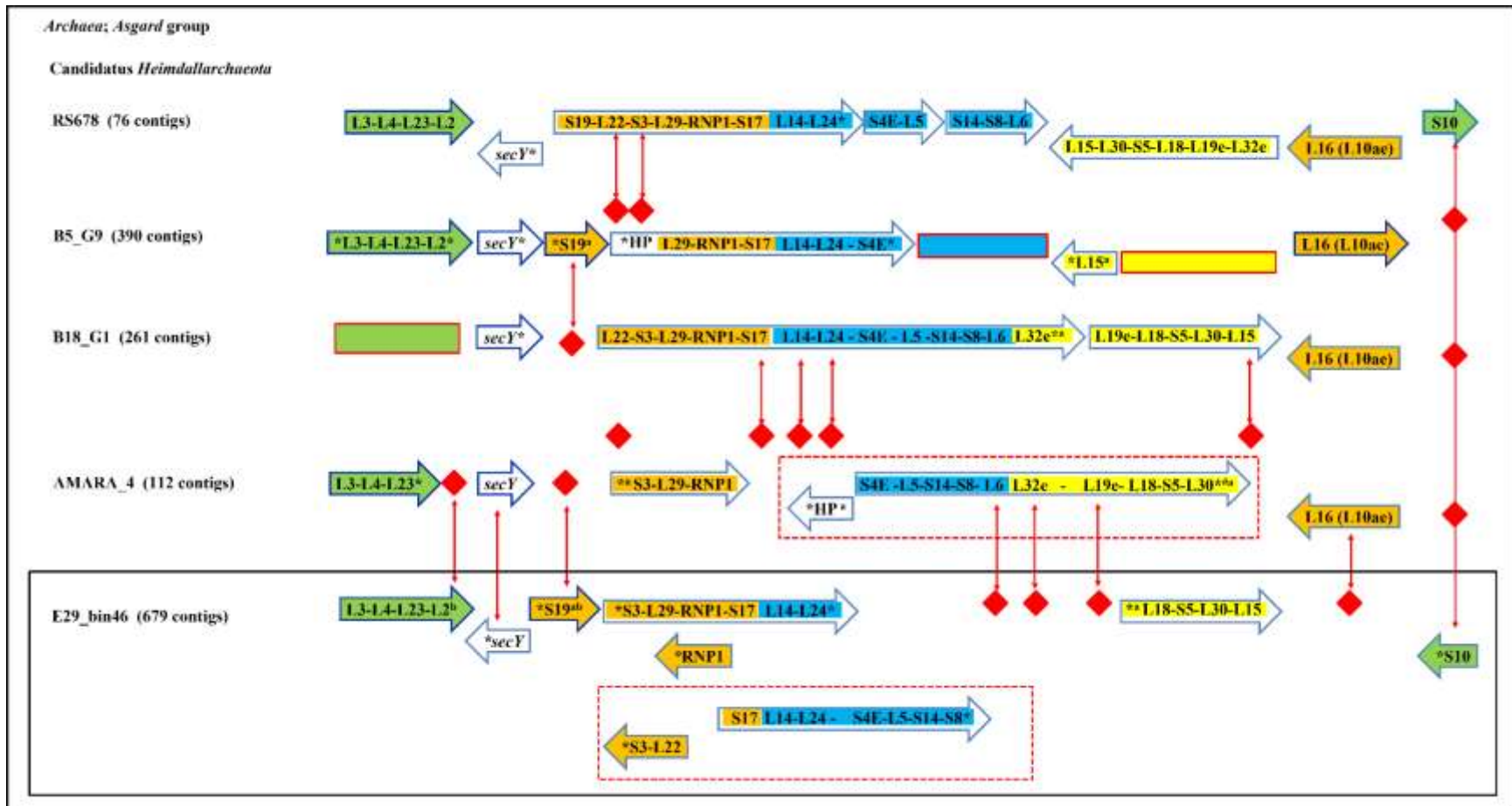
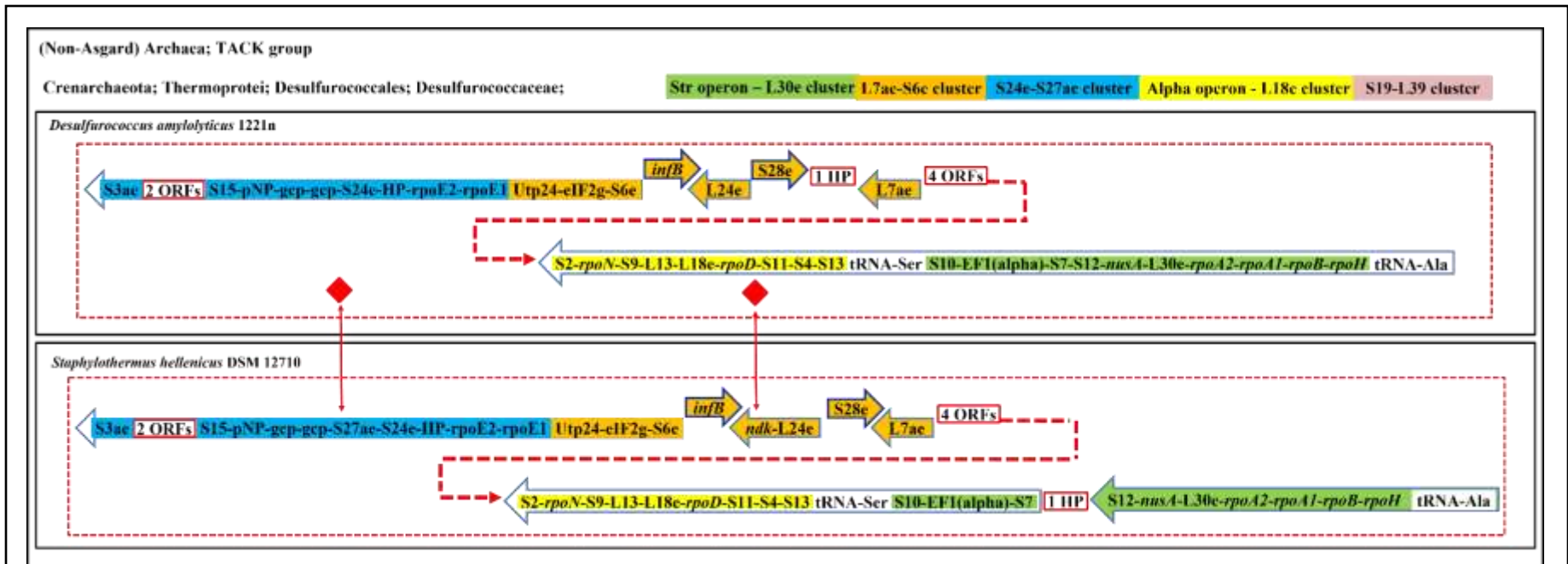


Supplementary Figure 1a: The *S10-spc* cluster distributed in multiple contigs in Asgard archaea. In *Odinararchaeota* LCB_4, arrows represent different locations on a single contig; adjacent arrows do not indicate their order on the genome; genes within an arrow are contiguous; the direction of the arrow denotes the strand orientation; * begins or ends a contig; Hsp20 – Heat shock protein 20: a- partial gene; d - pseudogene; ♦ gene(s) absent in the corresponding genome/location; arrows within dashed RED boxes are contiguous; HP- hypothetical protein; RNP1 - Ribonuclease P protein component 1; NCG - non cluster genes; # -ORF(s) annotated as HP(s); Hsp20 – Heat shock protein 20; blank box – entire gene set missing in corresponding genome location.



Supplementary Figure 1b: The *S10-spc* cluster distributed in multiple contigs in Asgard archaea. Adjacent arrows do not indicate their order on the genome; genes within an arrow are contiguous; the direction of the arrow denotes the strand orientation; * begins or ends a contig; Hsp20 – Heat shock protein 20; a - partial gene; NCG - non-cluster gene(s); d- pseudogene; ♦ gene(s) absent in the corresponding genome/location; arrows within dashed RED boxes are contiguous; HP- hypothetical protein; RNP1 - Ribonuclease P protein component 1; NCG - non cluster gene(s); # -ORF(s) annotated as HP(s); Hsp20 – Heat shock protein 20; blank box – entire gene set missing in corresponding genome location.



Supplementary Figure 2: The *S24e-S27ae-rpoE1* cluster is contiguous with *L7ae...Utp24*, the *Alpha-L18e* and the *str/L30e* clusters in the Desulfurococcales (Crenarchaeota) archaea, namely, *D. amylolyticus* 1221n and *S. hellenicus* DSM 12710. Genes within an arrow are contiguous; ♦ gene(s) absent in the corresponding genome/location; ORFs - Open reading frames; arrows within dashed RED boxes are contiguous; HP- hypothetical protein.