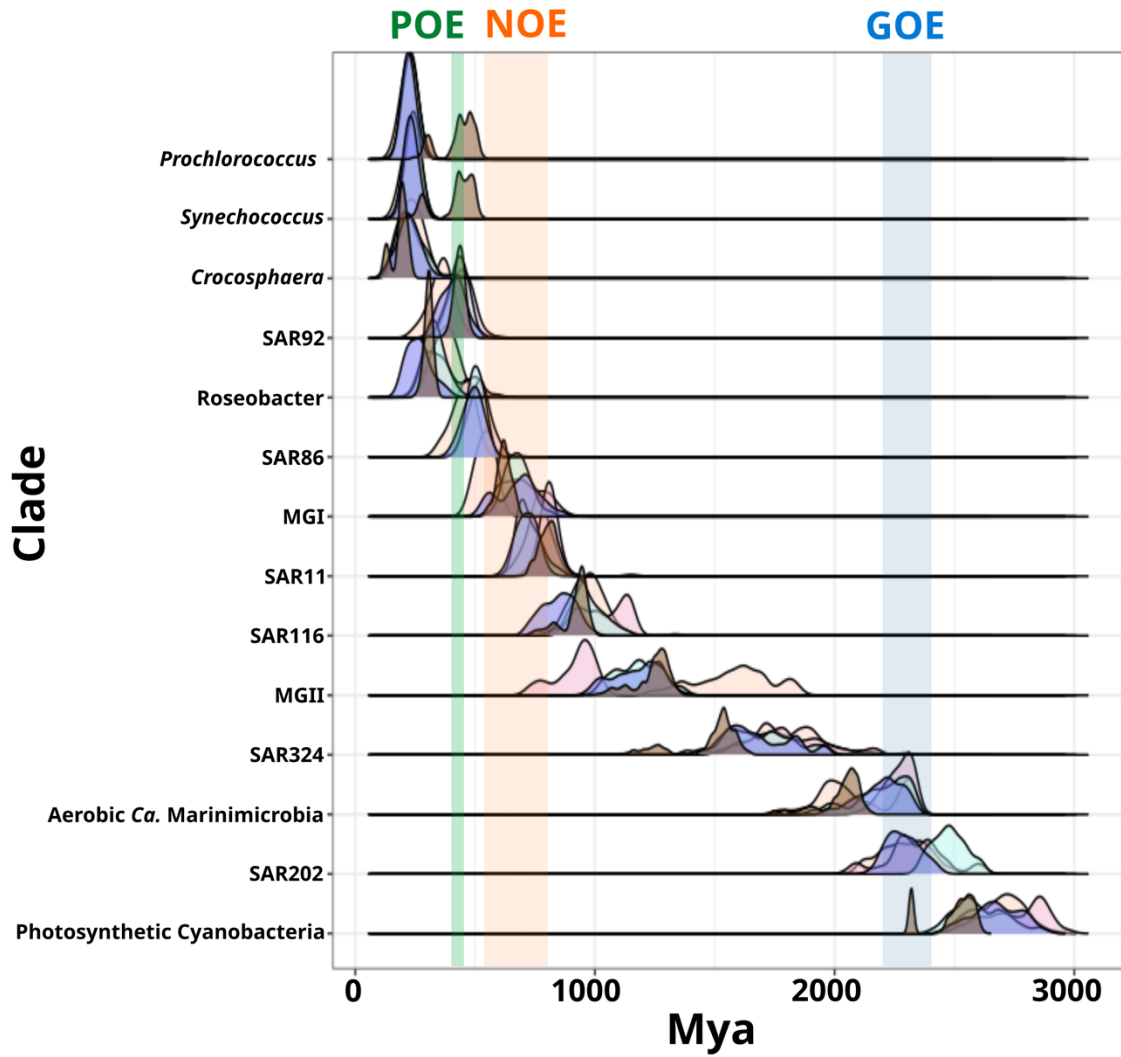


Supplemental File 3

Parameter	Effective Size	Relative difference
Loglik	7	0.16
Length	12	0.30
Sigma	21	0.16
Mu	37	0.09
Meanrates	19	0.16
Scale	19	0.57
Alpha	26	0.92
Nmode	70	0.29
Stat	8	0.37
Statalpha	20	0.94
Kappa	362	0.13
Allocent	10	0.51

Number of cycles = 92412; burn-in = 250; sampling = 2 cycles; 4 chains

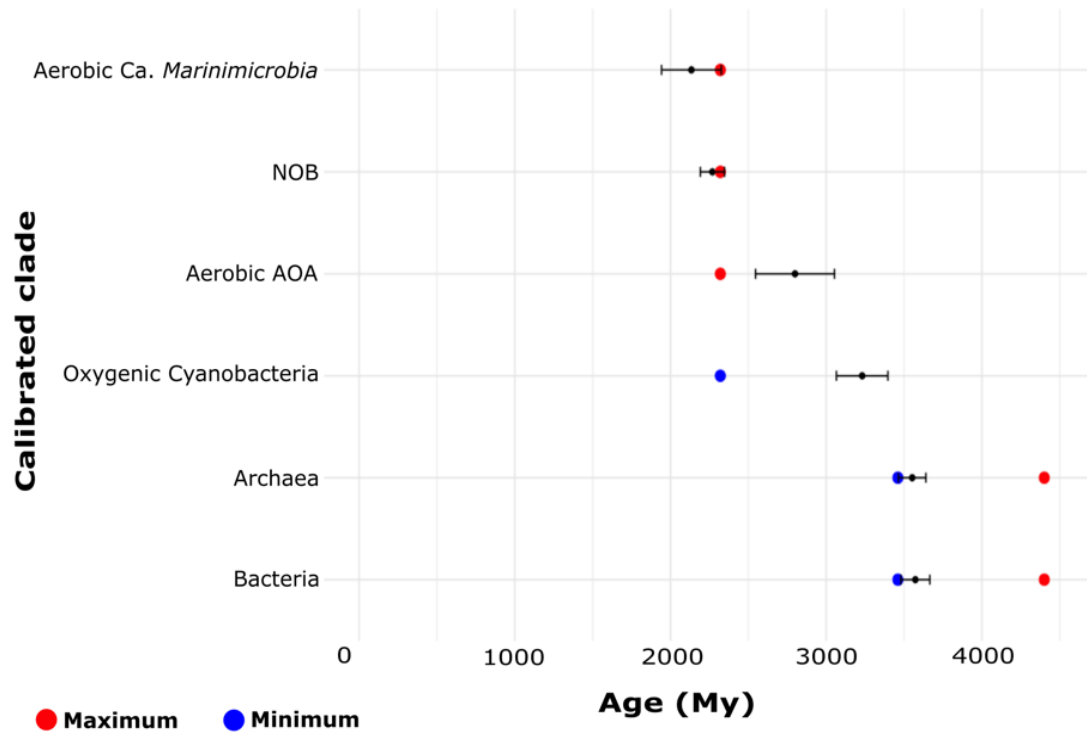
Supplemental File 4



Bayesian chain/method:

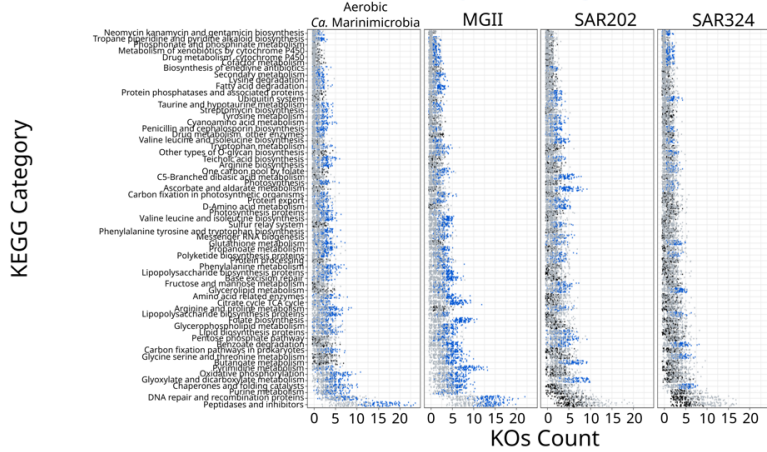
Chain 1 Chain 2 Chain 3 Chain 4 TreePL

Supplemental File 5

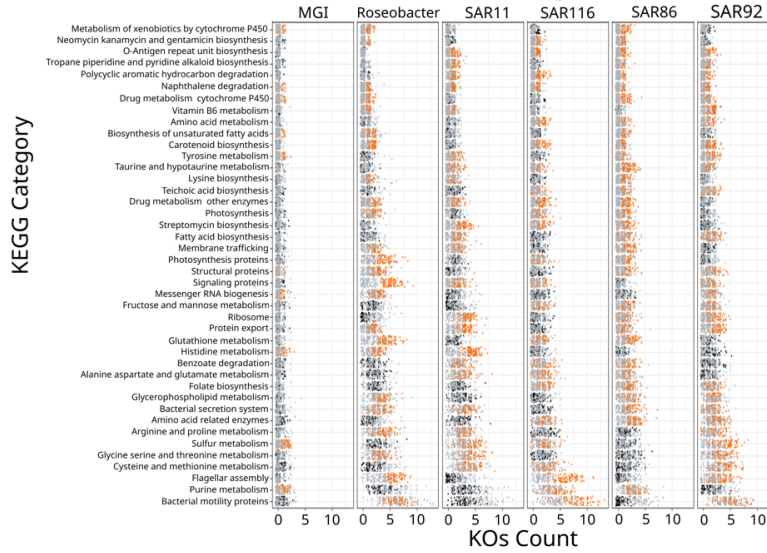


Supplemental File 7

Early-branching Clades



Late-branching Clades



Late-branching Phototrophs

