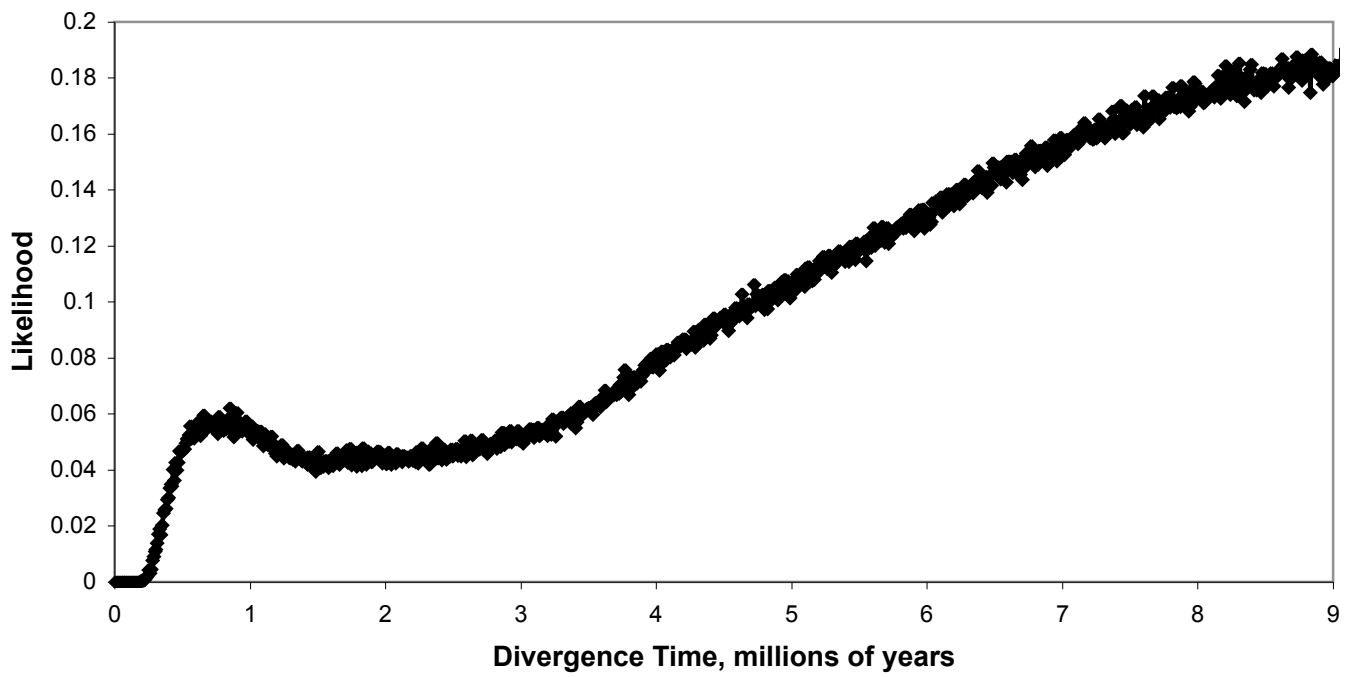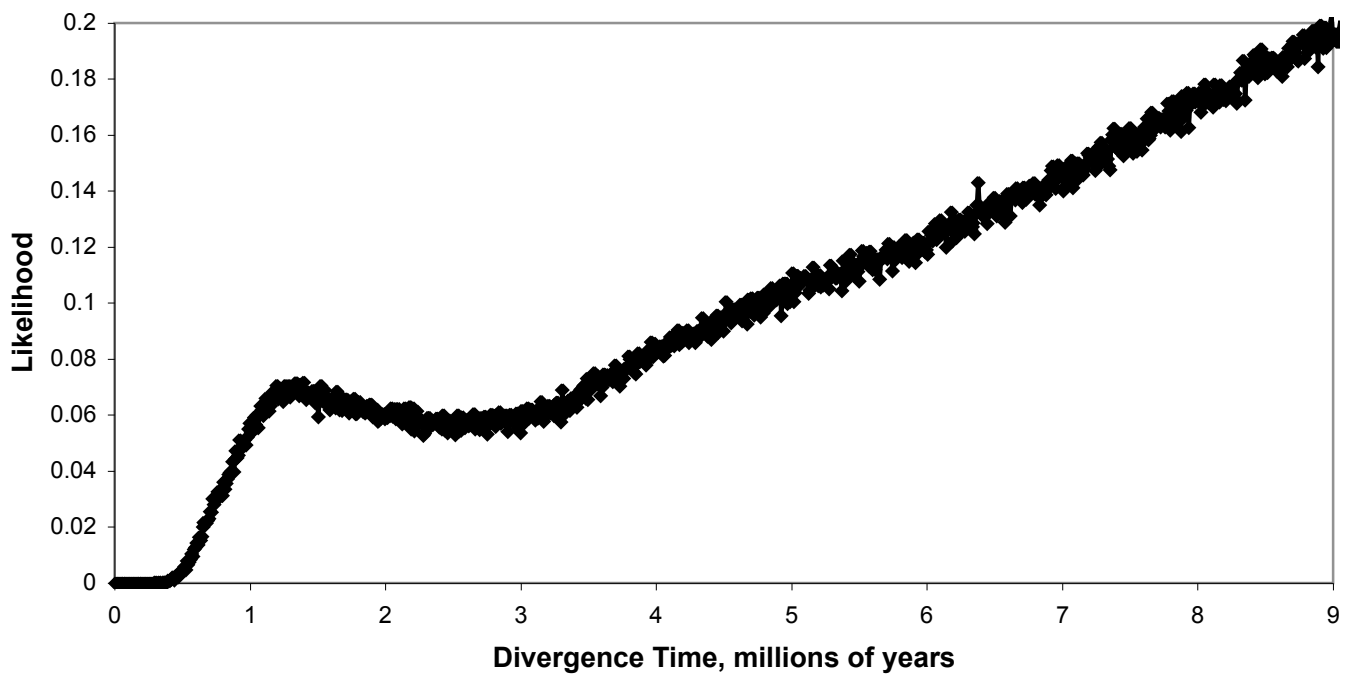Supplementary File S4.

Graphs of marginal posterior probability densities for the 20 datasets in which the divergence time posterior had a smaller peak near the true value and a larger peak or plateau well above the true value. The smaller peaks were used for MLEs.
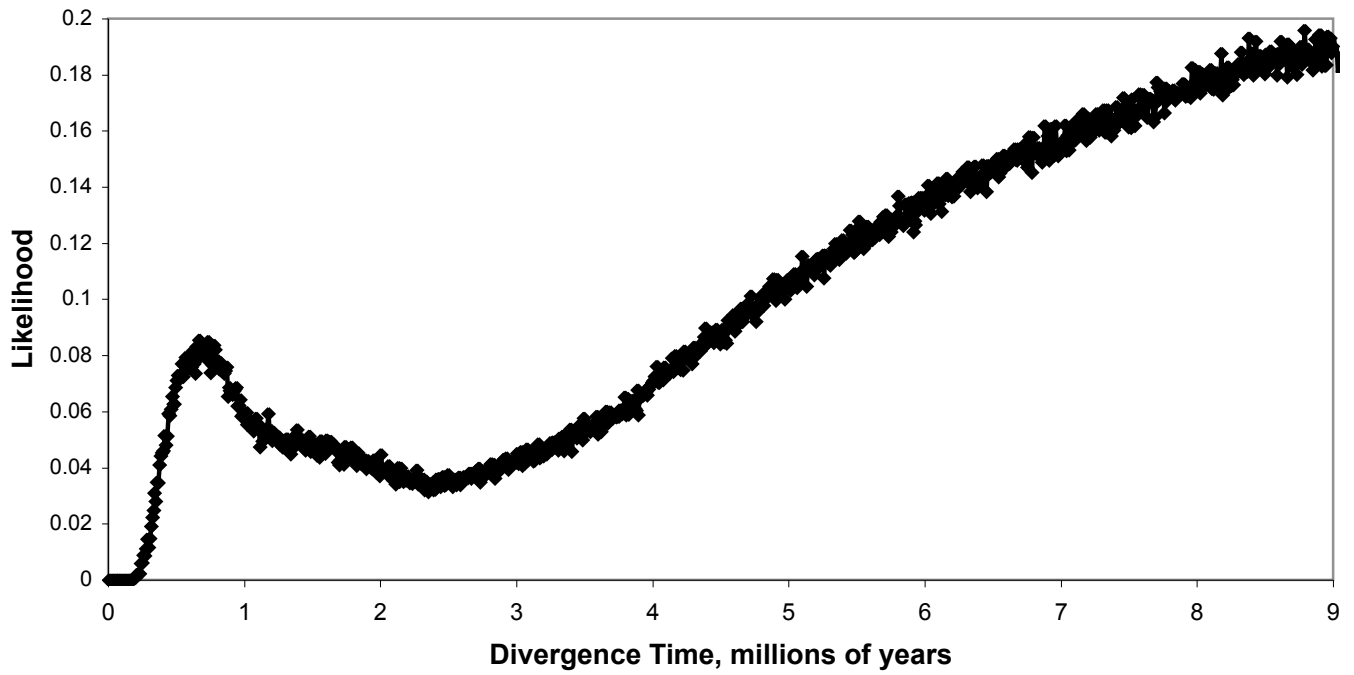
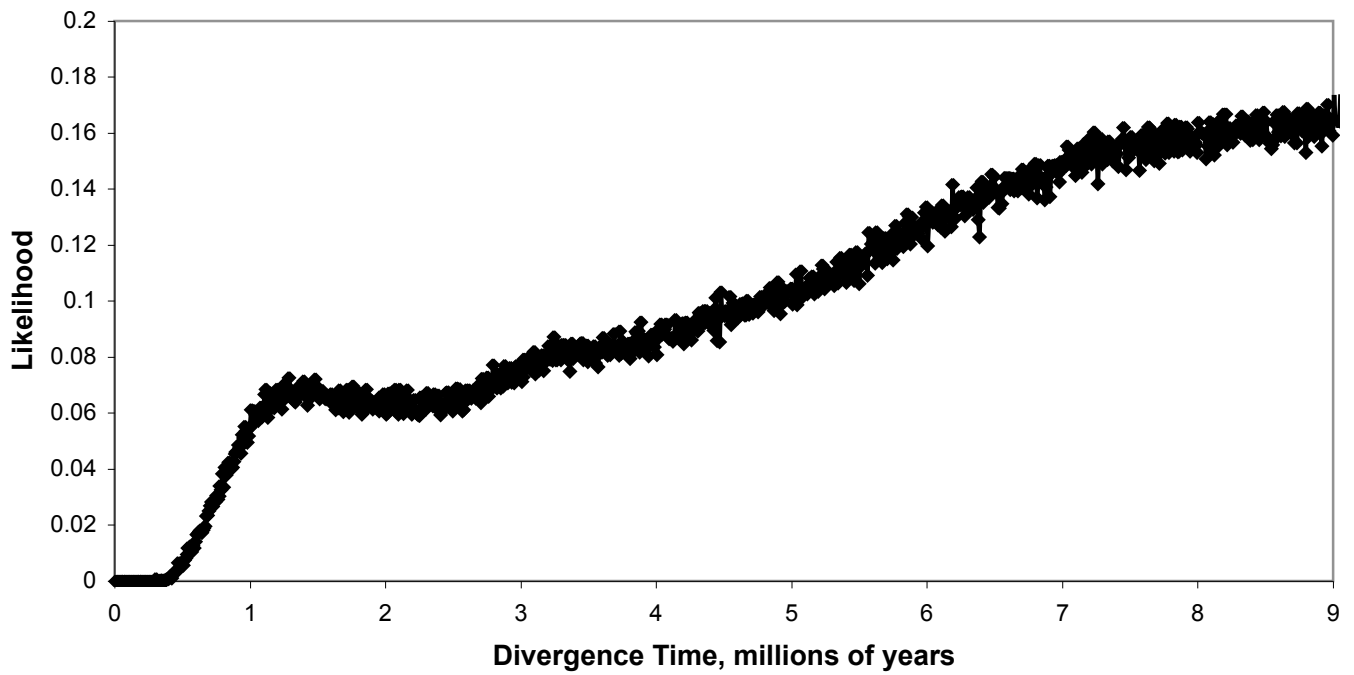# IS simulation, IS analysis, Dataset #1
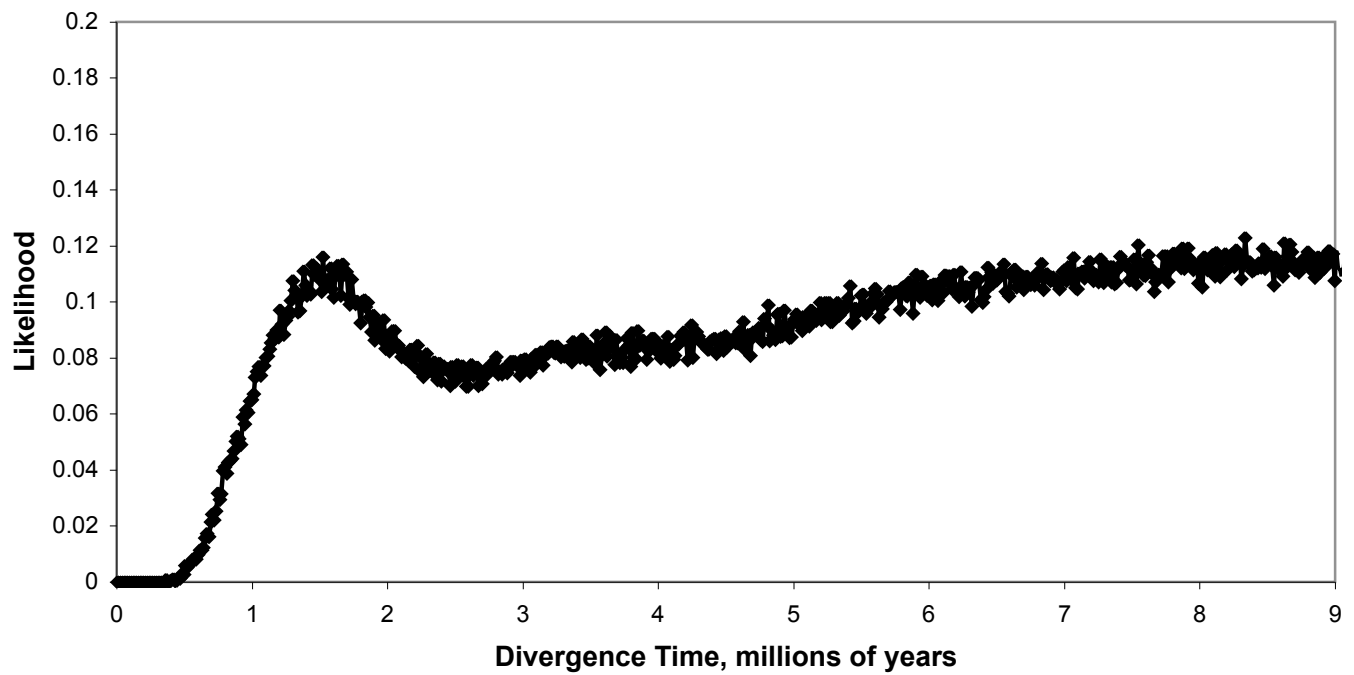

IS simulation, IS analysis, Dataset #3

IS simulation, HKY analysis, Dataset #1

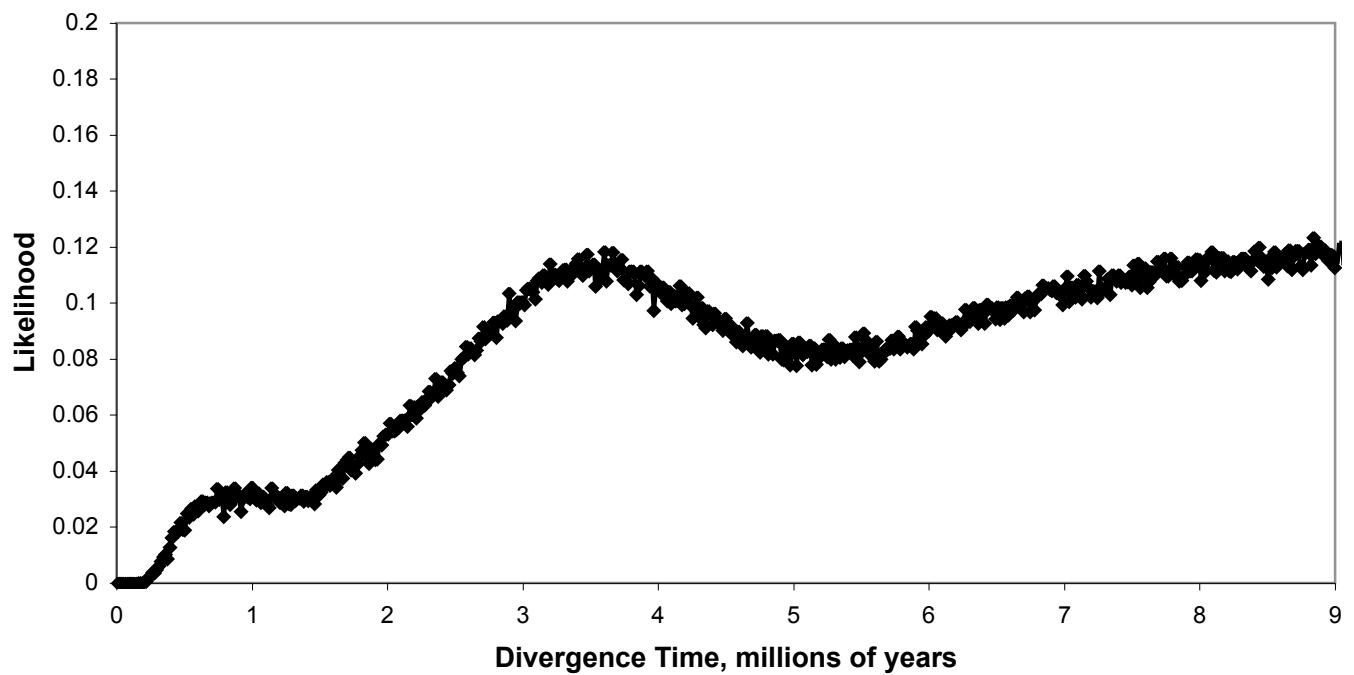(Likelihood vs. Divergence Time, millions of years)

IS simulation, HKY analysis, Dataset #3

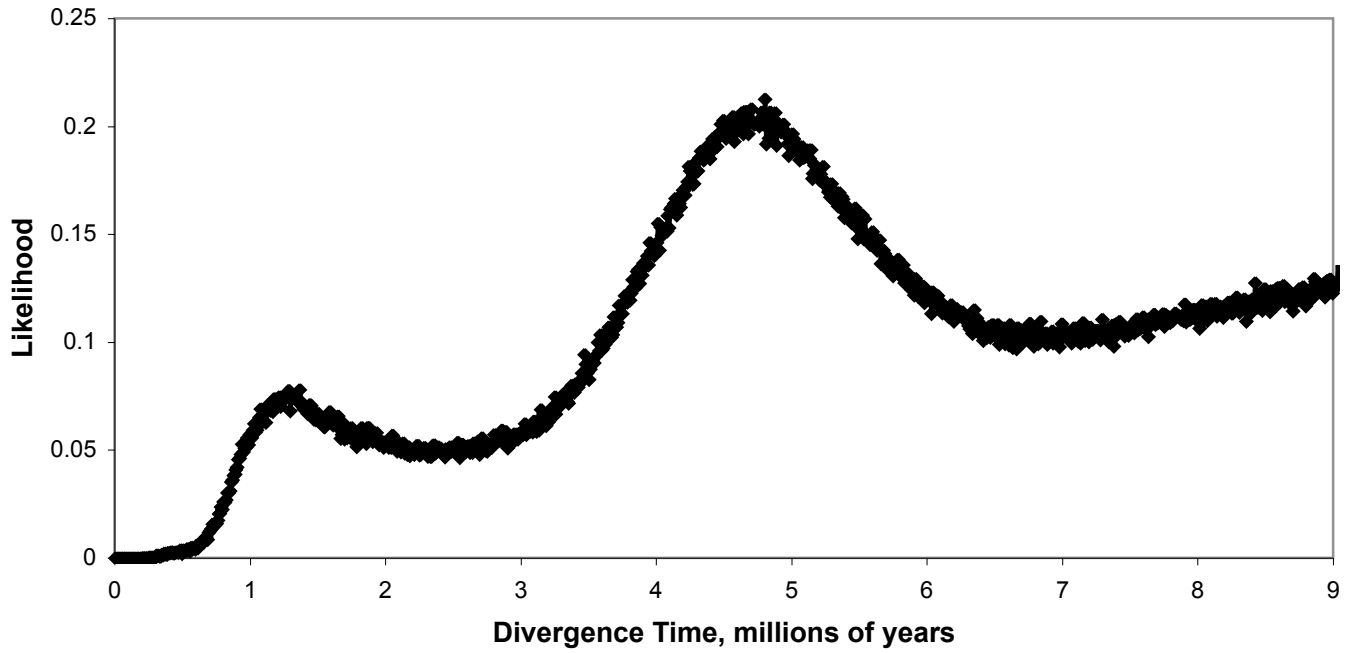(Likelihood vs. Divergence Time, millions of years)

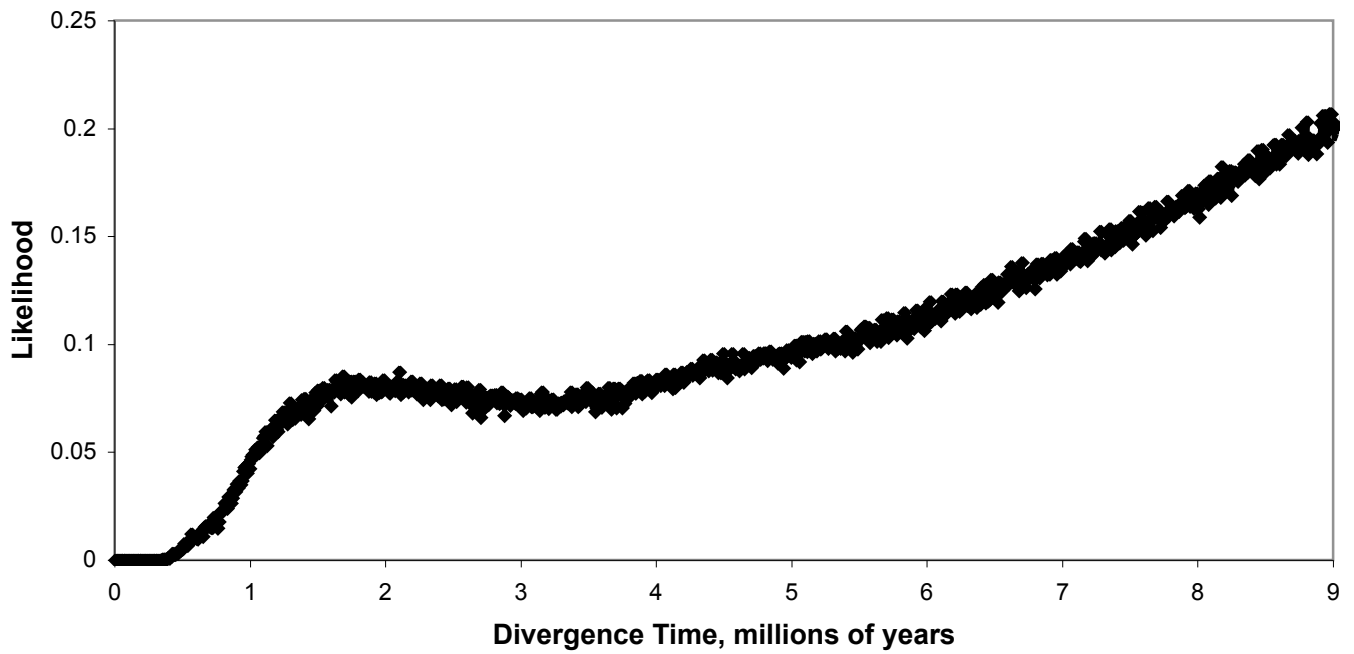## Non-Recombining Blocks, rho = 0.005, Dataset #2

Non-Recombining Blocks, rho = 0.005, Dataset #5

3rd Species Gene Flow, N$_{ef}$m = 0.2, Dataset #4

3rd Species Gene Flow, N$_{ef}$m = 0.2, Dataset #5

3rd Species Gene Flow, N_{ef}m = 0.3, Dataset #1
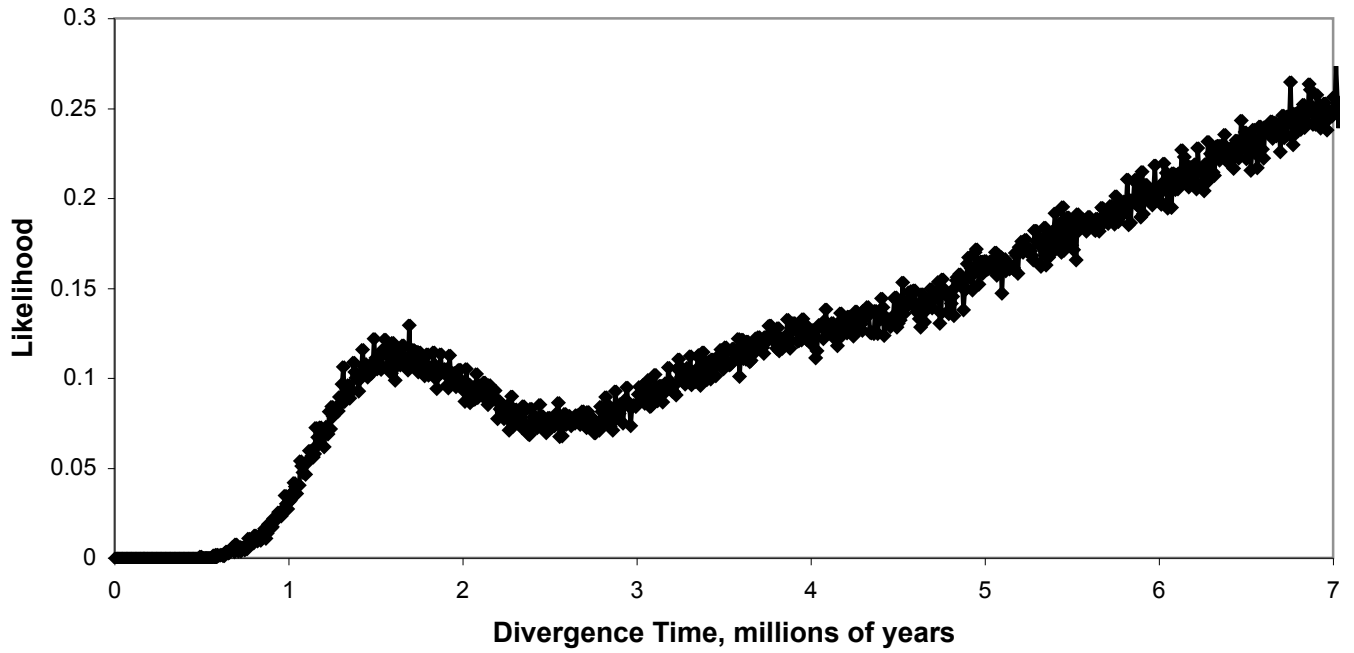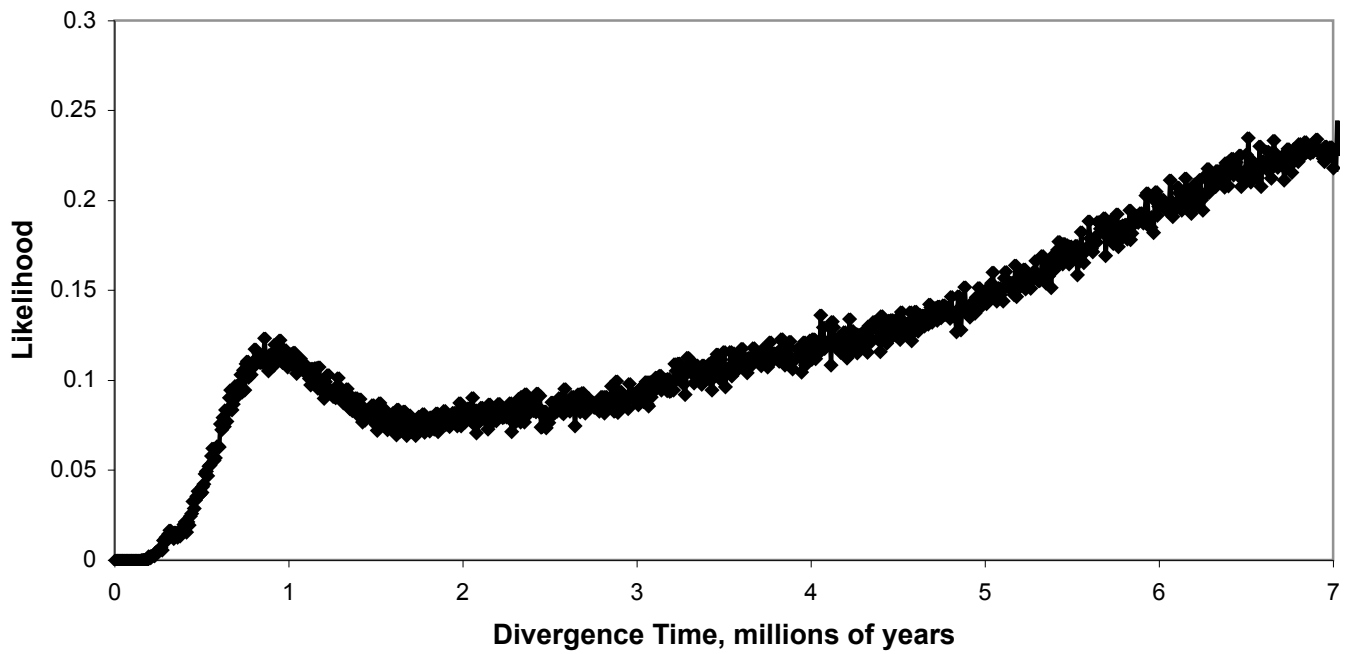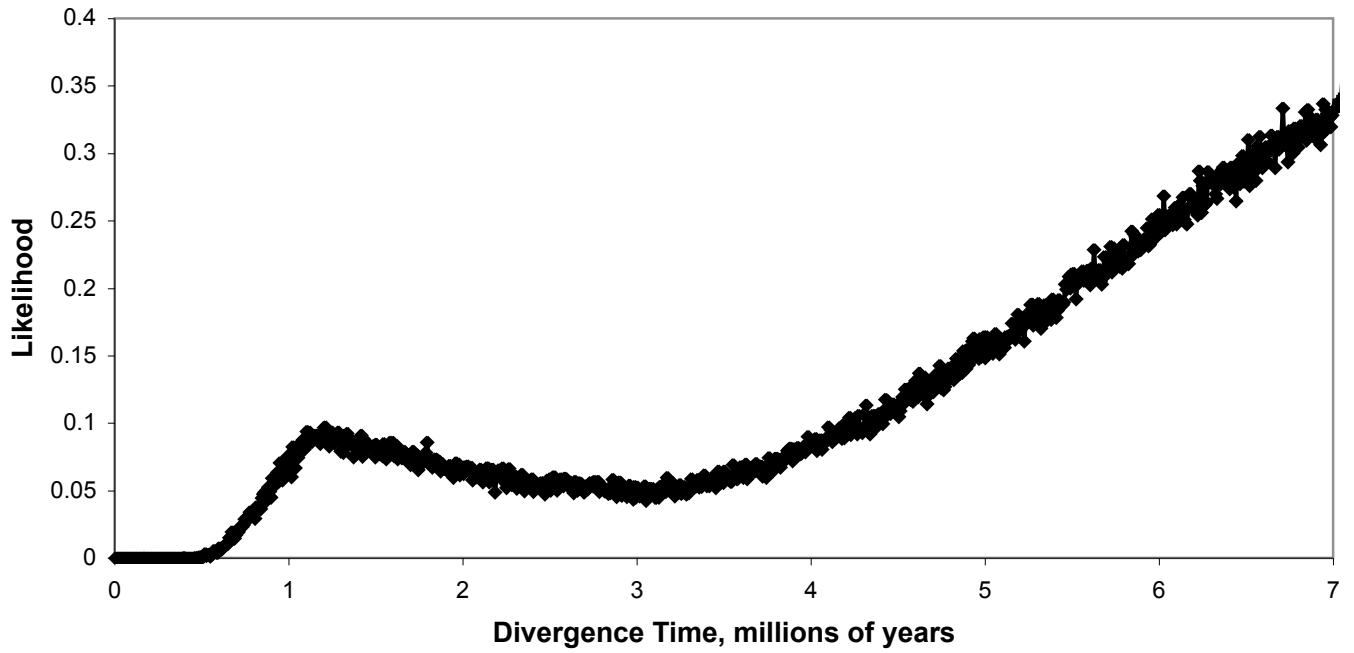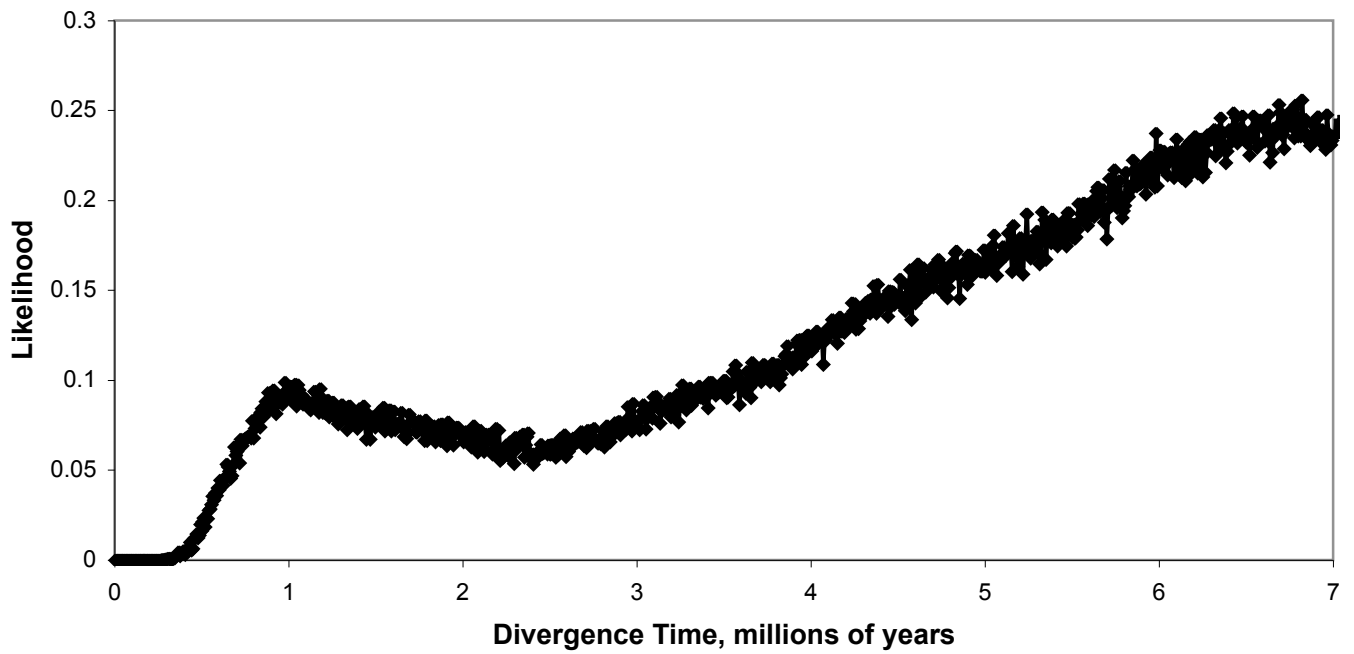
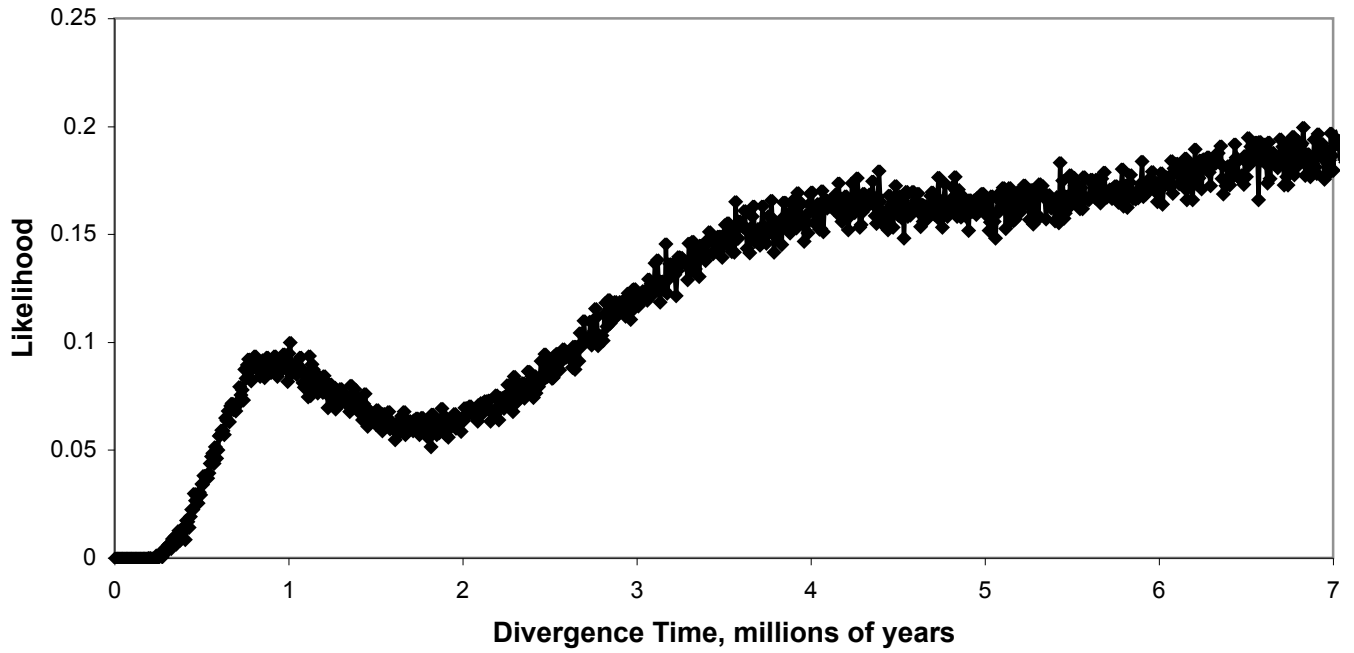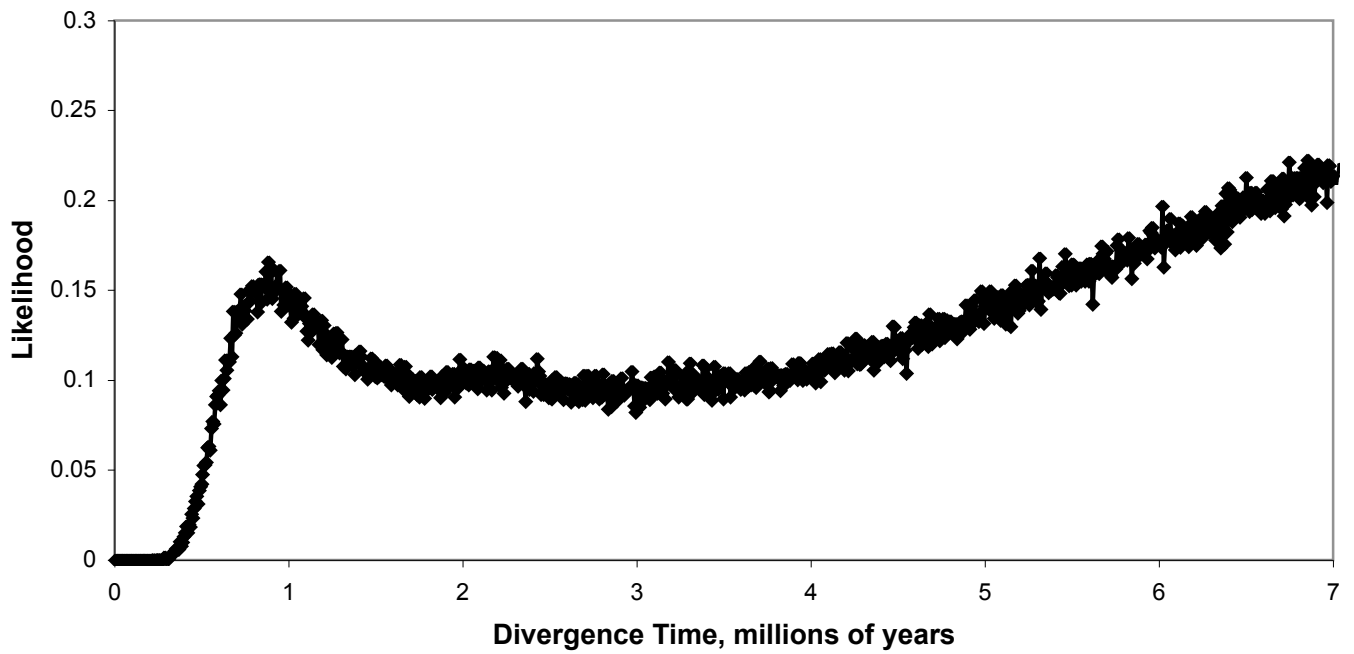**3rd Species Gene Flow, N_{ef}m = 0.3, Dataset #4**

3rd Species Gene Flow, $N_{ef}m$ = 0.3, Dataset #5

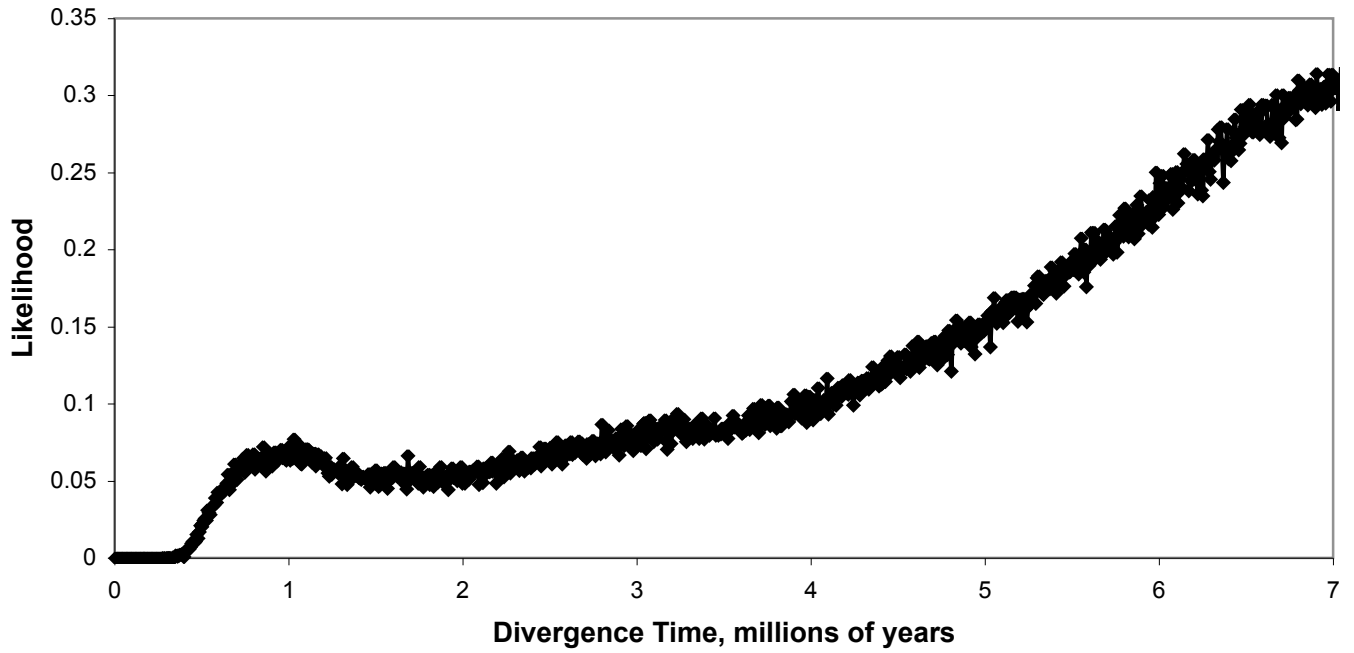**3rd Species Gene Flow, $N_{ef}m$ = 0.5, Dataset #2**
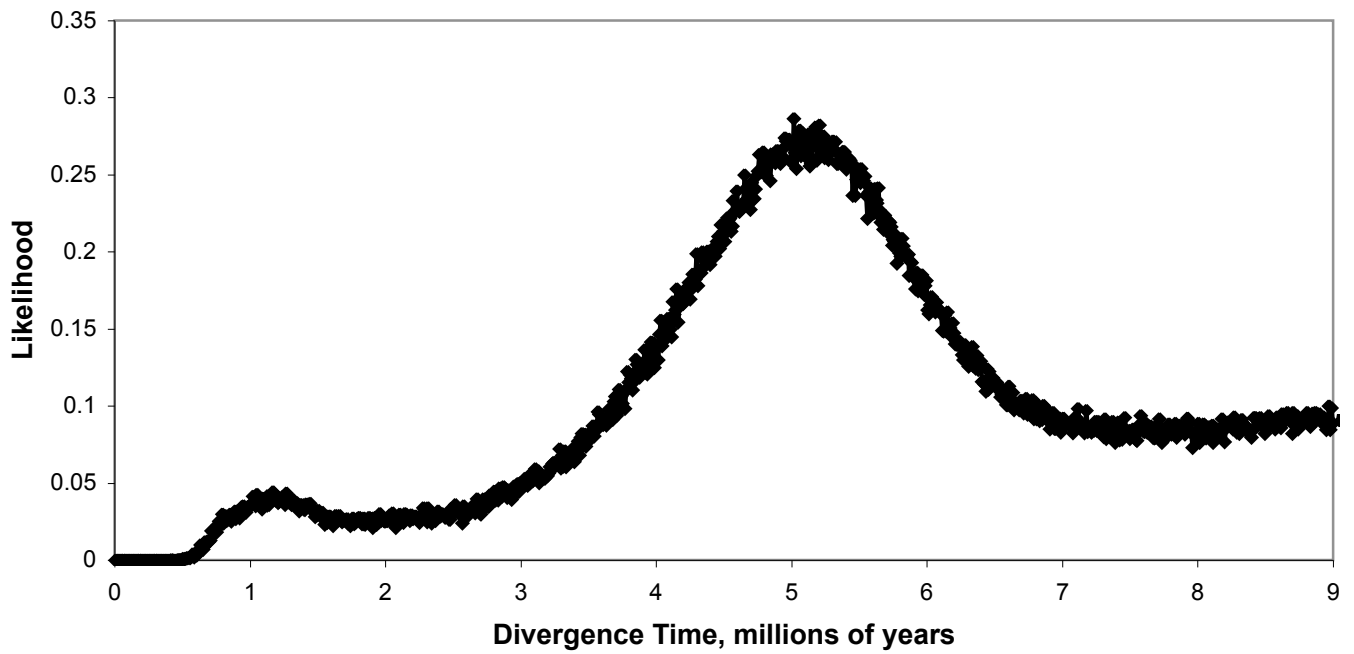
3rd Species Gene Flow, $N_{ef}m = 0.5$, Dataset #3

Likelihood

Divergence Time, millions of years

3rd Species Gene Flow, $N_{ef}m = 0.5$, Dataset #4

Likelihood

Divergence Time, millions of years
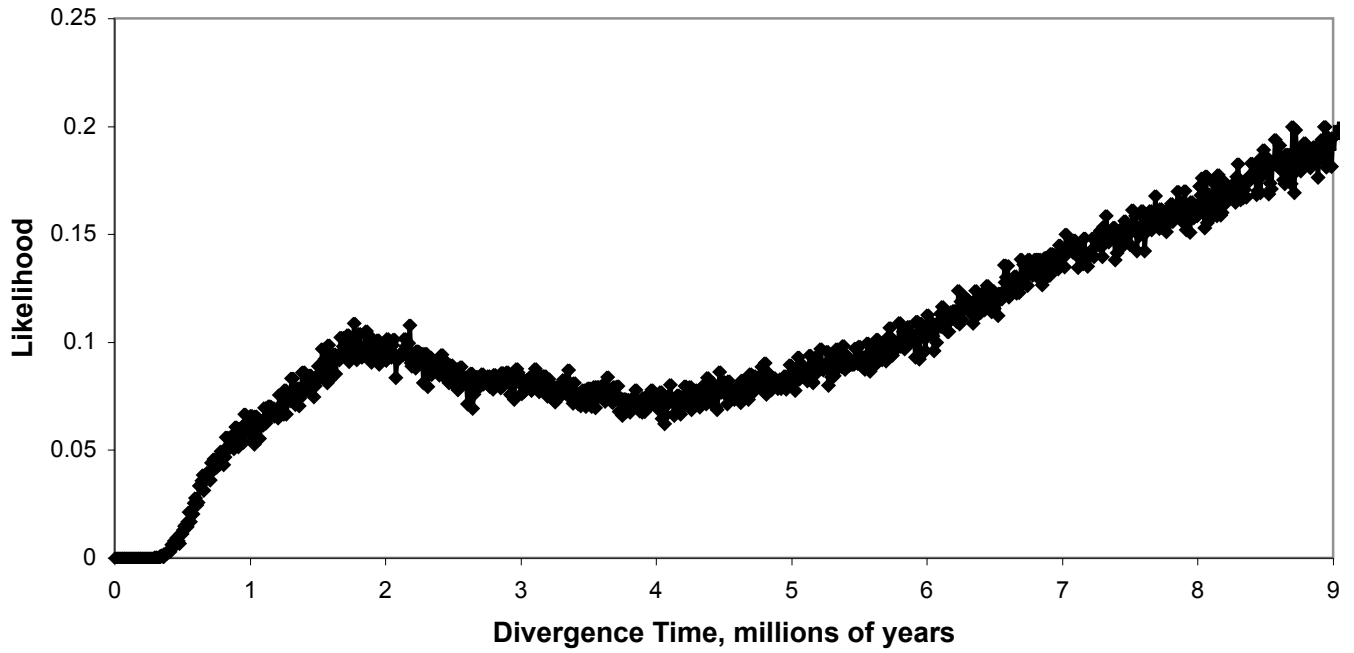
3rd Species Gene Flow, N_{ef}m = 0.5, Dataset #5
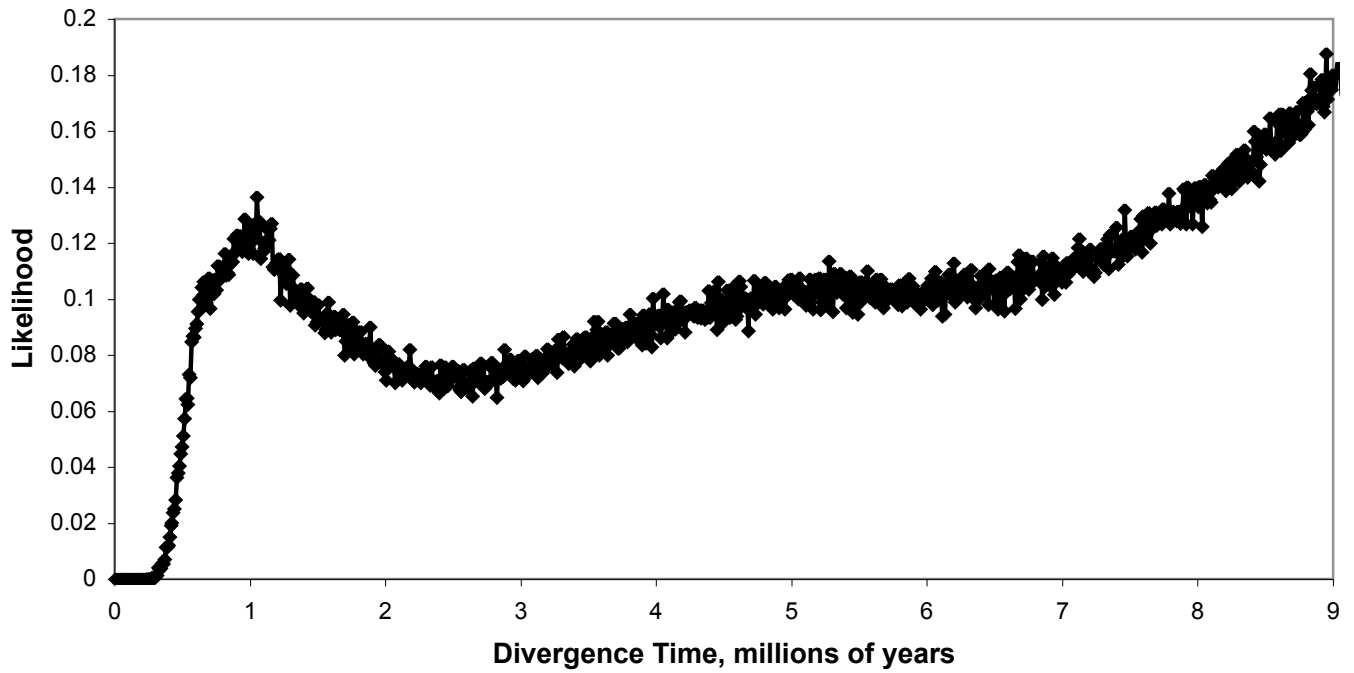

3rd Species Gene Flow, N_{ef}m = 1.0, Dataset #1
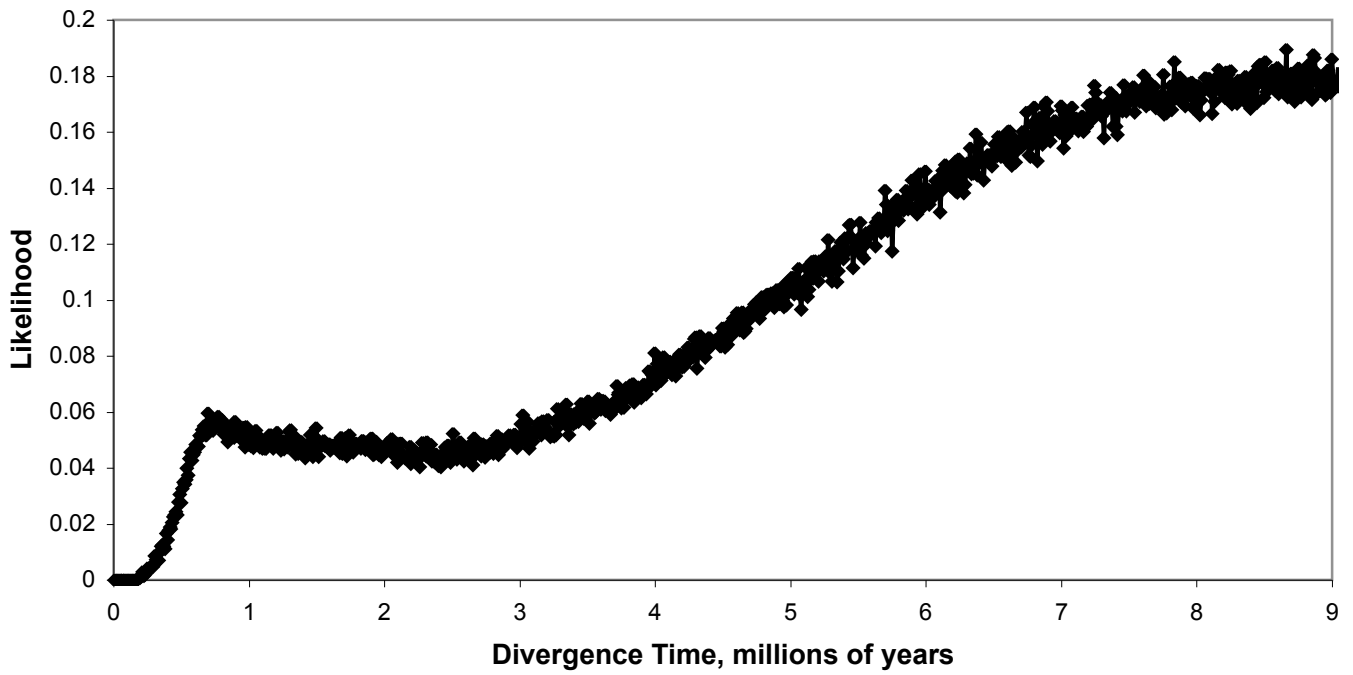
3rd Species Gene Flow, $N_{ef}m = 1.0$, Dataset #5

Linkage, r = 0.005, Dataset #2

Selective Sweep, Late Strong, Dataset #3

Likelihood vs Divergence Time, millions of years

Complex Demography, Exponential Growth, Dataset #2

Likelihood vs Divergence Time, millions of years