**Supplementary Material**

The Missing Tailed Phages: Prediction of Small Capsid Candidates

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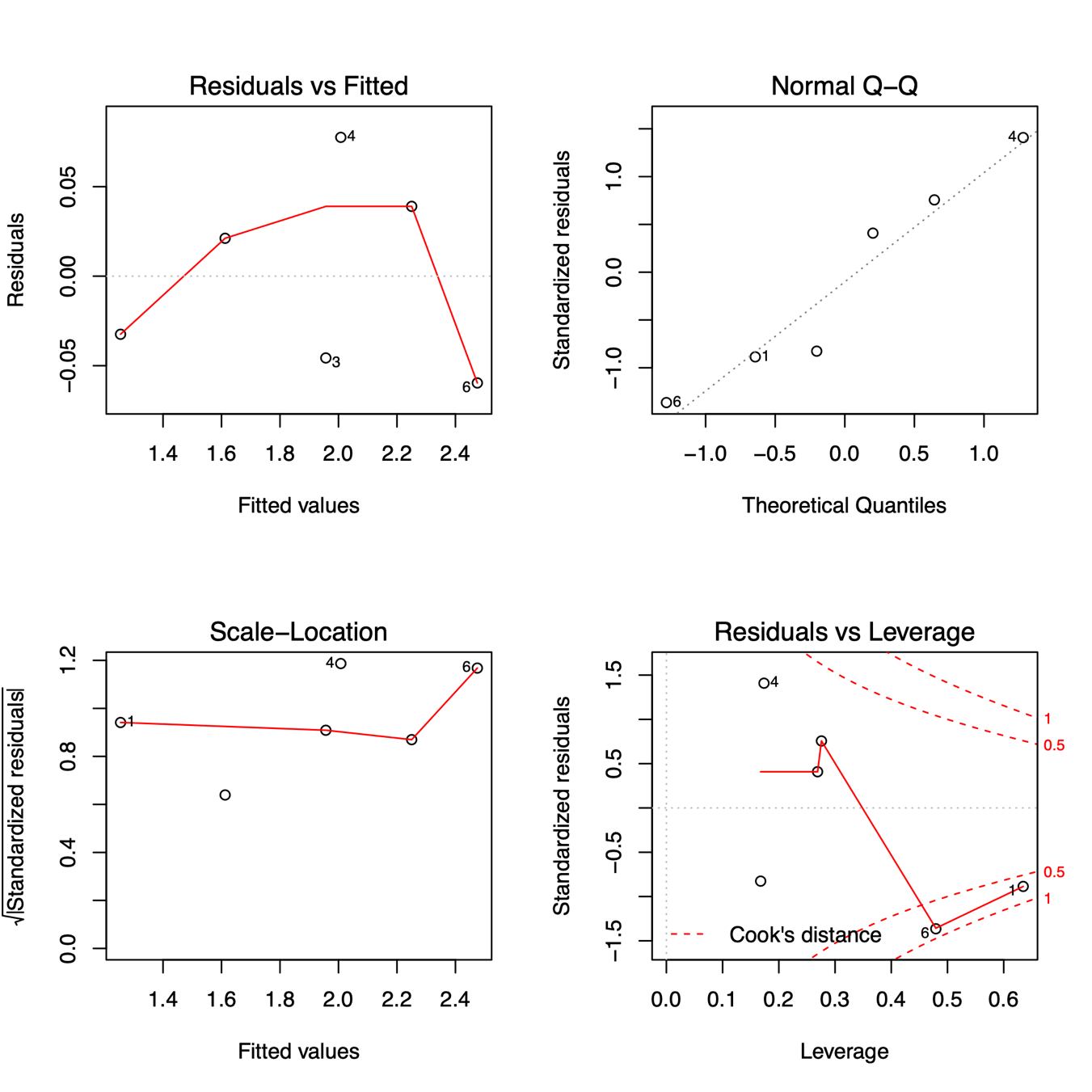
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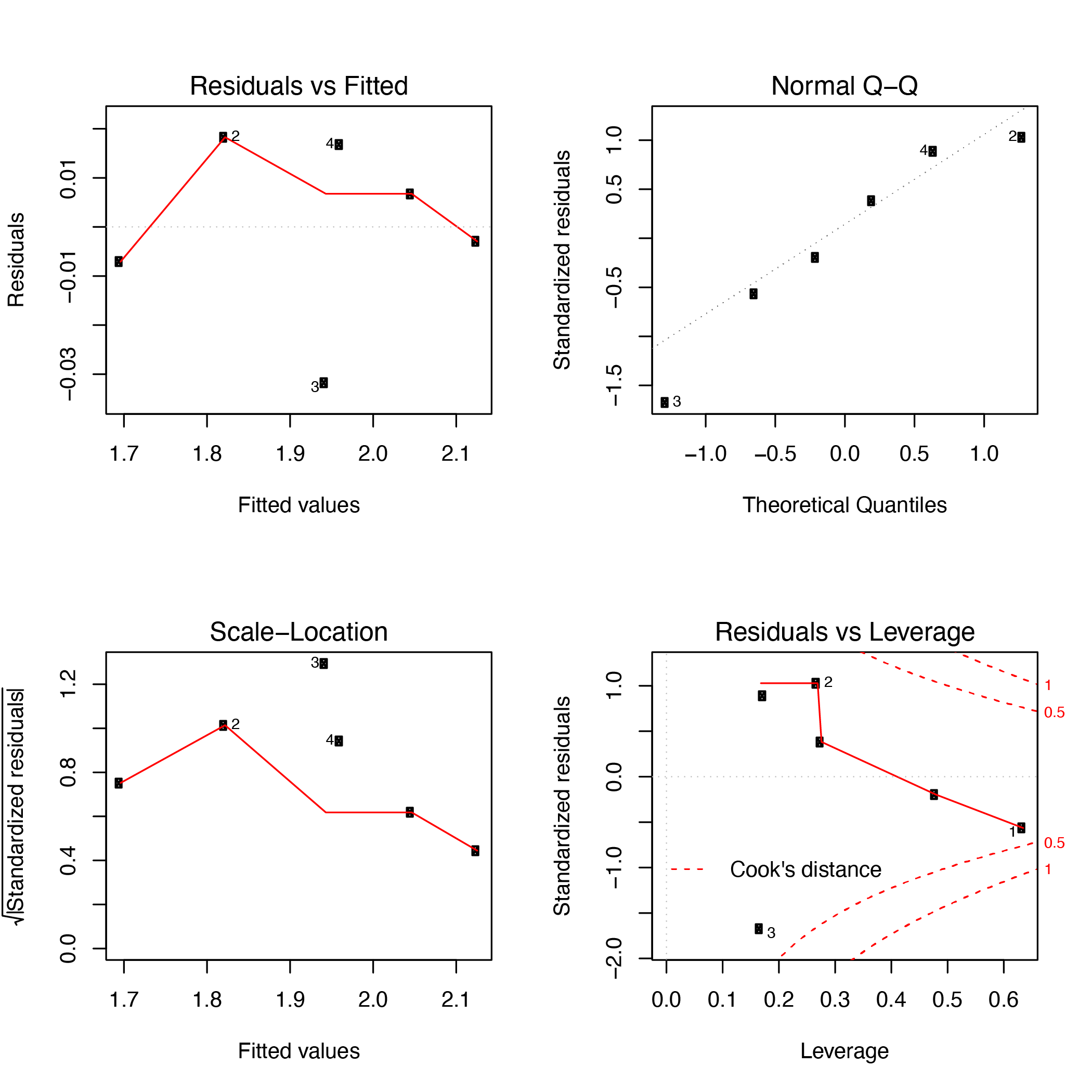
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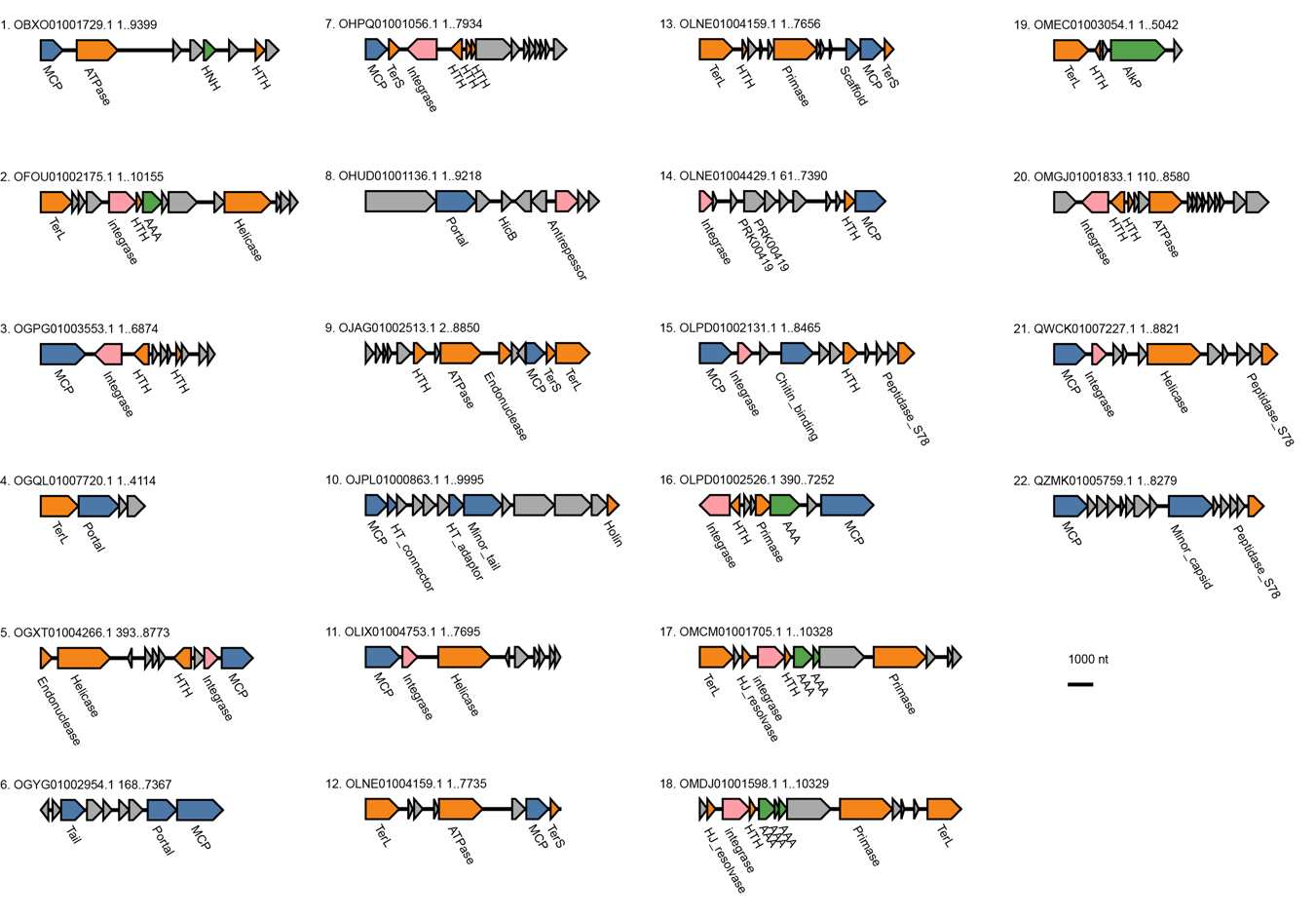
**Supplementary Figures and Tables**

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**Figure S1.** Residual diagnostics for the genome length model.

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**Figure S2.** Residual diagnostics for the capsid diameter model.

**Figure S3.** Annotated metagenome-assembled tailed phage genomes for predicted T ≤ 3 capsid architectures.

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| **Property** | **rho** | **p-value** |
| Interior volume | 0.924 | 4.09·10–6 \*\*\* |
| Interior surface | 0.923 | 4.08·10–6 \*\*\* |
| Exterior surface | 0.989 | 2.84·10–6 \*\*\* |
| Genome size | 0.817 | 3.37·10–6 \*\*\* |
| Capsids thickness | 0.663 | 0.0010 \*\* |
| Interior sphericity | –0.566 | 0.0069 \*\* |
| Exterior sphericity | –0.684 | 0.0006 \*\*\* |
| Genome density | –0.162 | 0.4695 |
| MCP interior area§ | 0.484 | 0.0242 \* |
| MCP exterior area§ | 0.380 | 0.0819 |

**Table S1.** Correlation analysis with capsid size. Spearman’s correlation coefficient (rho) for structural properties as a function of the external capsid diameter. The stars in the p-value are associated to standard cut-offs for statistical significance: (\*) p < 0.05, (\*\*) p < 0.01, and (\*\*\*) p < 0.001.