

SUPPLEMENTARY ONLINE MATERIAL

Mechanisms of photic entrainment of activity/rest rhythms in populations of *Drosophila* selected for divergent timing of eclosion

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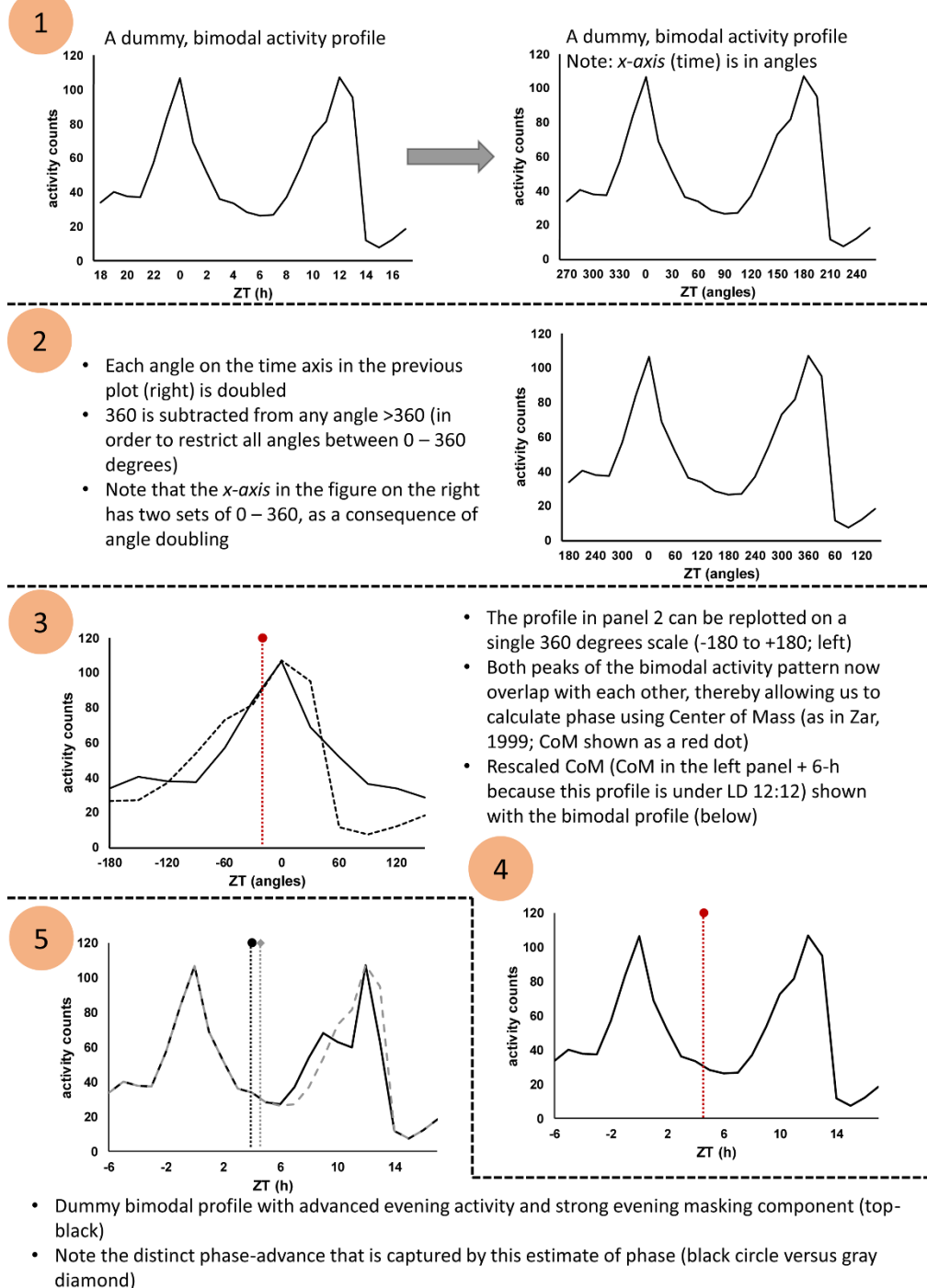
Running Title: Mechanisms of light entrainment in early and late flies

[†]Posthumous

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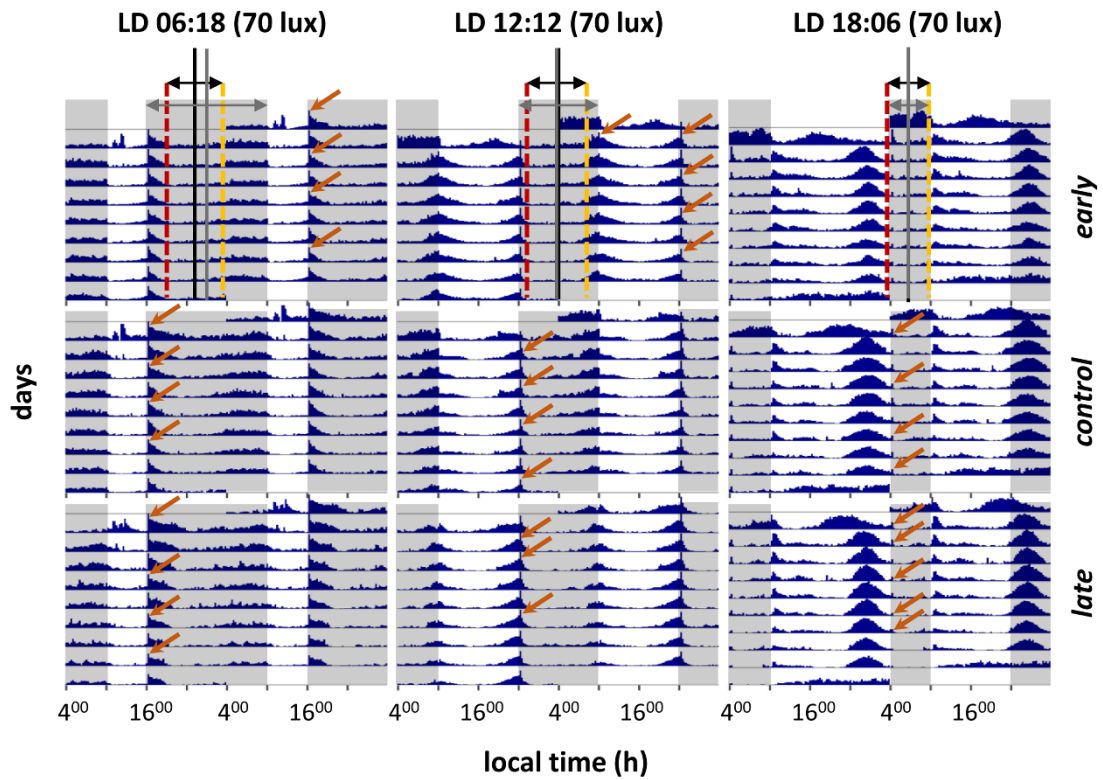
Supplementary Figures

Estimating phase using center of mass for bimodal distributions

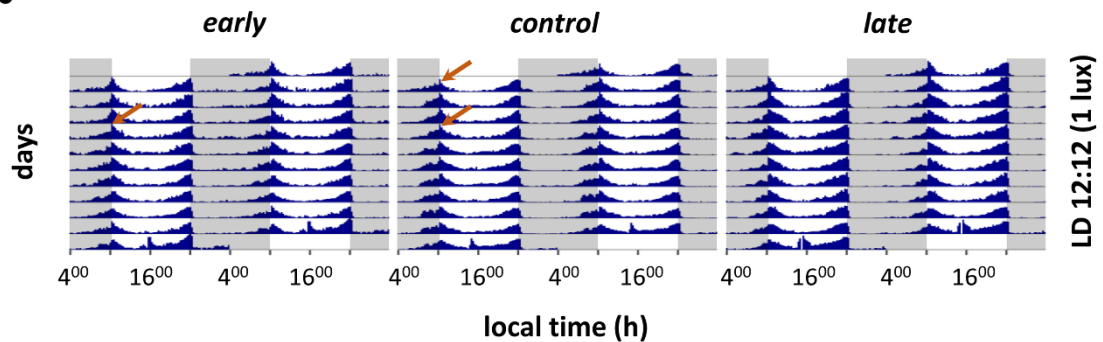


Supplementary Figure 1: A schematic to describe the estimation of CoM when the distribution of activity is bimodal. Also, shown is a representation of how such an estimate is useful when there are subtle differences in the phase of activity and strong masking components.

a



b



Supplementary Figure 2: (a) Representative batch actograms of *early* (top), *control* (middle) and *late* (bottom) stocks under LD 06:18 (left), LD 12:12 (middle) and LD 18:06 (right) with 70 lux light intensity during the photophase. The gray shaded region indicates the dark phase of the LD cycle. Red dashed line indicates phases of activity offset, the yellow dashed line indicates phases of activity onsets. The difference between the two (indicated by two-headed black arrow) is the rest phase, mid-point of which is considered as Internal Time (InT) 00 (black solid line). The two-headed gray arrow indicates the duration of dark phase of the respective LD cycles, mid-point of which is considered as External Time (ExT) 00 (gray solid line). The difference between ExT00 and InT00 is used as the

experimental phase-relationship values against which all simulated phase-relationship values are compared. Please note that for LD 12:12 and LD 18:06, ExT00 and InT00 coincide to a large extent, thereby yielding phase-relationship values very close to 0. Also, marked are bouts of masking effects of light (orange arrows). (b) Representative batch actograms of *early* (left), *control* (middle) and *late* (right) stocks under LD 12:12 (1 lux during the photophase). Orange arrows indicate masked components of activity, as before. Please note, the significantly lower bouts of masking components in the activity profiles under 1 lux light intensity.