Supplemental online material for:

Light-dependent behavioural phenotypes in PER3 deficient mice

Daan R van der Veen and Simon N Archer

Faculty of Health and Medical Sciences
University of Surrey
Guildford GU2 7XH, UK

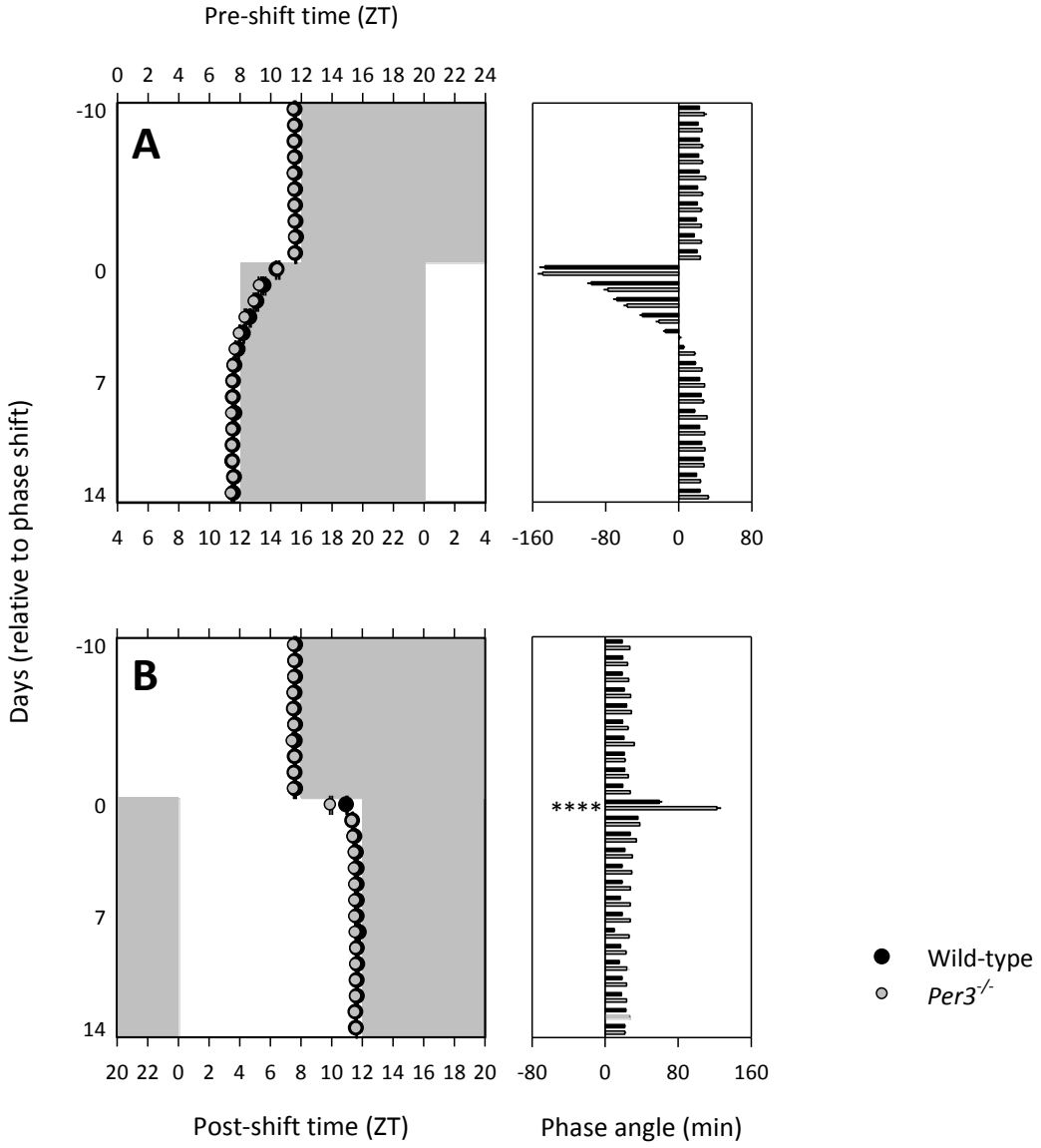
Supplemental table T1

Free-running period length (average ± standard error of the mean) for WT and *Per3*$^{-/-}$ mice in constant dark (DD) and three conditions of constant light (LL).

	WT mice	*Per3*$^{-/-}$ mice	Δ Period
DD 0 mW m^{-2}	23 hrs 43 mins ± 3 mins	23 hrs 37 mins ± 3 mins	NS (6 mins)
LL 10 mW m^{-2}	24 hrs 19 mins ± 2 mins	24 hrs 4 mins ± 2 mins	15 mins ****
LL 188 mW m^{-2}	24 hrs 49 mins ± 2 mins	24 hrs 30 mins ± 2 mins	19 mins ****
LL 845 mW m^{-2}	25 hrs 17 mins ± 4 mins	24 hrs 50 mins ± 5 mins	27 mins ****

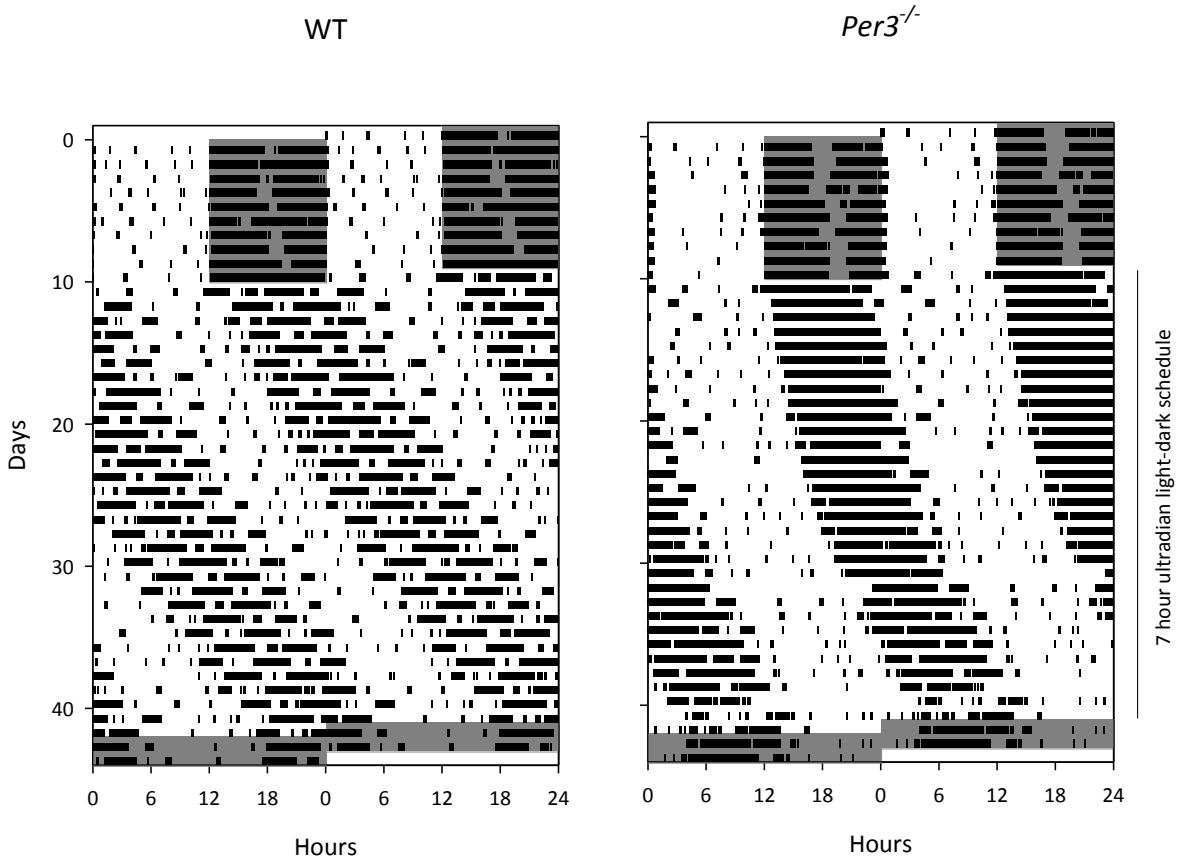
**** $P < 0.0001$

Supplemental figure S1



Average onset of running wheel activity (left panels) and phase angle between lights-off and onset of activity (right panels) before and after a phase-advance (A) and a phase-delay (B) in the entraining 12:12 LD cycle. Both WT (black circles and bars) and *Per3*$^{-/-}$ (grey circles and bars) mice re-entrained to the advanced and delayed LD cycles, but *Per3*$^{-/-}$ mice showed a significant reduced behavioural response during the first day of re-entrainment to the phase delay in LD. 16 mice for each genotype were subjected to both LD shifts in a cross-over design, data of one *Per3*$^{-/-}$ mouse was considered an outlier because the phase angles were more than twice those of the other mice. Error bars indicate standard error of the mean. Grey areas indicate darkness. **** $P < 0.0001$

Supplemental figure S2



Double plotted actograms of running wheel activity for a WT and a *Per3*$^{-/-}$ mouse that were initially entrained to a LD, and then went through 11 episodes (days 11 – 42) of ultradian cycles (3.5 h light – 3.5 h dark) of increasing light intensity during lights-on, and lastly in constant darkness. Data are re-plotted from figure 3, now on a 24 hour timescale. Dark grey areas indicate darkness; white areas indicate light episodes or ultradian cycles.