

Description of Additional Supplementary Files

File name: Supplementary Data 1

Description: Lepidoptera opsins annotated with the presence and absence of opsins and the diel activity table including details on the transcriptomes as well as the source. Legend: Diel habitat N= Nocturnal, D = Diurnal, uk = Unknown, B = Both, C = Crepuscular, “?” = ambiguity in assignment, na = quality metrics not applicable Sheet2: References for diel-niche

File name: Supplementary Data 2

Description: Orthofinder results of the various transcriptomes, the original identity of the genes is taken from Munoz et al.¹ The species corresponding to each assembly is listed in Data 1 (Citation for 1 : Macias-Muñoz, A., Olguin, A. G. R. & Briscoe, A. D. Evolution of Phototransduction Genes in Lepidoptera. *Genome Biol. Evol.* 11, 2107–2124 (2019).)

File name: Supplementary Data 3

Description: Duplication events identified by Notung

File name: Supplementary Data 4

Description: PAML and HyPhy implementations of selection models of different datasets, ** refer to p-value <0.01, * refers top-value <0.1, bold text refers to sites in common across different selection analyses.