**Figure 4. Proteome rhythmicity under alternating light/dark cycles and integration with the transcriptome. (A)** Barplots representing the number of identified proteins under long day conditions (top, LD, 16h light / 8h dark) and under short day conditions (bottom, SD, 16h light / 8h dark). The number of rhythmic proteins under LD conditions is represented in blue and under SD conditions in red. Non rhythmic proteins are represented in white. **(B)** Protein abundance profiles under LD (top, blue) and SD (bottom, red) conditions represented together with gene expression profiles under LD (top, light blue) and SD (bottom, light red) conditions for *Minichromose Maintenance 2* (*ostta11g00910*, *MCM2*). White rectangles represent photoperiods (light periods or days), blue and red filled rectangles correspond to skotoperiods under LD and SD respectively (dark periods or nights). ZTN, Zeitgeber time N, marks the time point N hours after dawn (lights on, ZT0). *MCM2* illustrates that commonly protein rhythmic profiles exhibit an offset with respect to gene expression profiles. **(C)** Histograms showing the distribution of the number of proteins with phase or maximum abundance at specific time points under LD conditions (top, blue) and SD conditions (bottom, red). Offsets are apparent in protein abundance phases with respect to gene expression phases (time points of maximum protein abundance or gene expression). Under both LD and SD conditions protein abundance phases accumulate at the end of the skotoperiods (dark periods) and during photoperiods (light periods). **(D)** Boxplot representing the offset in hours between protein abundance and gene expression phases under LD (blue) and SD (red) conditions. Medians are represented by central horizontal lines, upper and lower quartiles by boxes, minimum and maximum values by whisker ends. Protein/gene offsets are significantly longer under SD conditions with respect to LD conditions according to a p-value of 1.2 × 10-9 computed using Mann-Whitney-Wilcoxon test. **(E)** Boxplots representing protein/gene offsets under LD (left, blue) and SD (right, red) conditions for different gene sets with specific phases or maximum expression time points. Under LD conditions no significant difference is observed whereas under SD conditions genes with phases during the skotoperiod (dark period ZT8, ZT12, ZT16 and ZT20) present significantly longer offsets when compared to those genes with phases during the photoperiod (light period ZT0 and ZT4) according to Mann-Whitney-Wilcoxon test. **(F)** Boxplot illustrating how genes involved in different biological processes according to their gene ontology (GO) annotation present distinct protein/gene offsets that are longer under SD (red) than LD (blue) conditions. DNA replication (GO:0006260), photosynthesis (GO:0009521) and translation (GO:0006412) are chosen as examples exhibiting short and long protein/gene offsets. **(G)** Protein abundance and gene expression profiles under LD and SD conditions for *Sister Chromatid Cohesion 1* (left, *ostta03g03780*, *SMC1*), *Photosystem I Light Harvesting Complex 2* (center, *ostta03g04920*, *LHCA2*) and *Ribosomal Protein S1* (right, *ostta02g04680*, *RPS1*). This illustrates how genes involved in DNA replication or photosynthesis present short gene/protein offsets whereas genes involved in translation present long offsets.