



Fig. 13. Timing of peak downward and upward migration velocity relative to the times of sunrise and sunset. The difference in minutes between the time of the peak vertical velocity between 4:00–7:00 and 17:00–20:00 and the time of sunrise/sunset was calculated; negative values indicate that migration preceded sunrise/sunset. Data used for this figure were from May 4, 1997 through March 30, 1998.

versus day of the year (abscissa). Shown in the figure are averaged values over the depth interval of 121–190 m for backscatter intensity and relative vertical velocity (the latter relative to 34–43 m depth) from May 4, 1997 through March 30, 1998 (Deployments 7–9). These time series clearly show seasonal variations of the diel migration and zooplankton biomass (Fig. 12). Specifically, day

length modulates the timing of the migration. The timing of migration clearly changes with the seasonal light progression, with ascents earlier in the evening (backscatter intensity increases), and descents later (backscatter intensity decreases) in the morning in winter compared to summer (Fig. 12).

Fig. 13 shows the timing of peak downward and upward migration velocity relative to the times of