

**Planktonic ciliates move in the water column during the artificial night of a total solar eclipse.**

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**Abstract**

The effect of a total solar eclipse on marine microzooplankton was investigated on the 29<sup>th</sup> of March 2006, when at Kastelorizo island (E. Mediterranean), the sun was completely obscured by the moon. The eclipse provided an opportunity to observe *in situ* the effects of a sudden withdrawal of light intensity on the behaviour of ciliate protists. The abundance and vertical distribution of the various ciliate groups were investigated before, during, and after the eclipse. Water samples were taken hourly, between 11:00 and 17:00 h, every 10m in the water column. The rapid decrease in light intensity during the day elicited a direct response in ciliate distribution and movement along the water column and the rapid adoption of night-time behaviour during the eclipse. Heterotrophic ciliates (of the taxa *Lohmaniella*, *Strombidium* and *Strobilidium*), showed a non-random distribution and tended to accumulate at 30m depth before and after the eclipse, with a vertical spreading in the water column during totality. Mixotrophic species, mainly *Strombidium delicatissimum*, *S. conicum* and *Tontonia sp.*, were concentrated at the 10m surface layer before the first contact their vertical distribution did become more even during darkness and rose again near to the surface in response to increasing day light. Although these data cannot be simply extrapolated to other water bodies of the ocean provide a significant insight in light induced ciliate vertical motility patterns that can play an important role in planktonic food webs.

**Keywords:** microzooplankton, ciliates, vertical distribution, eclipse, Eastern Mediterranean.

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