

FULL TEXT LINKS



[Naturwissenschaften](#). 2012 Jun;99(6):465-72. doi: 10.1007/s00114-012-0921-5. Epub 2012 May 26.

Spontaneous ultra-weak light emissions from wheat seedlings are rhythmic and synchronized with the time profile of the local gravimetric tide

[Thiago A Moraes](#) ¹, [Peter W Barlow](#), [Emile Klingelé](#), [Cristiano M Gallego](#)

Affiliations

PMID: 22639076 DOI: [10.1007/s00114-012-0921-5](#)

Abstract

Semi-circadian rhythms of spontaneous photon emission from wheat seedlings germinated and grown in a constant environment (darkened chamber) were found to be synchronized with the rhythm of the local gravimetric (lunisolar) tidal acceleration. Time courses of the photon-count curves were also found to match the growth velocity profile of the seedlings. Pair-wise analyses of the data--growth, photon count, and tidal--by local tracking correlation always revealed significant coefficients ($P > 0.7$) for more than 80% of any of the time periods considered. Using fast Fourier transform, the photon-count data revealed periodic components similar to those of the gravimetric tide. Time courses of biophoton emissions would appear to be an additional, useful, and innovative tool in both chronobiological and biophysical studies.

LinkOut – more resources

Full Text Sources

[Springer](#)