Intrinsic, periodic and tunable metabolic dynamics: a scaffold for cellular coherence

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Cover design by Alexandros Papagiannakis

The cover depicts the Canis Major (greater dog), a constellation which contains Sirius, the brightest star in the night sky, also known as the "dog star". In 1844, Friedrich Wilhelm Bessel observed oscillations in the motion of Sirius, inferring the existence of an unseen "dark companion" exerting gravitational forces. In 2003 an image taken by the Hubble Space Telescope clearly demonstrated Sirius A, 2 times bigger and 25 times brighter than our sun, next to its stellar companion, a white dwarf known as Sirius B. Eventually, Sirius is a system of two stars. This is an example of how the collective synchrony within a system of coupled oscillators may be used to infer the existence of individual components and possibly also their interactions.

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