

Cover Picture

Lars T. Burgdorf, and Thomas Carell

The cover picture shows the sun together with a damaged (back) and repaired (front) DNA strand. The emitted sun energy is the basis for all life on earth. The UV part of the electromagnetic spectrum, however, causes the formation of a variety of mutagenic DNA lesions, which endanger the integrity of the genetic material. These lesions are repaired by a class of photolyases which utilize long-wavelength sunlight and a flavin coenzyme to initiate a critical electron transfer from the enzyme to the UV lesion. Carell and co-workers describe on p. 3918 ff the synthesis of lesion-containing DNA strands in which the flavin coenzyme was integrated. These DNA strands show a sunlight-driven self-repair process based on a surplus electron transfer through the base stack. (The sun picture is courtesy of the SOHO consortium; SOHO – Solar and Heliospheric Observatory—is a project of international cooperation between ESA and NASA.)

