

*Solar Activity and Earth's Climate* (2nd ed.), 2006. Springer, P.O. Box 17, 3300 AA Dordrecht, The Netherlands, jointly published with Praxis Publishing, UK. Hardcover, xxvi + 309 pages, 50 illustrations. Price EUR 99.95; USD 129.00. ISBN978-3-540-30620-7.



The book deals with the sun and solar activity (80 pages) followed by a part on climate (190 pages). The first part is below standards, which I will illustrate. There are three aspects in solar activity. The driving machine is the solar dynamo, which produces at the solar surface (1) the activity regions of which the hot plages (facular fields) are an important feature for influencing climate, and (2) the Coronal Mass Ejections (CME's) that also may affect climate. None of these three aspects is dealt with in a fair way. The part on the dynamo does not describe the essential aspects. Names of prominent authors like Dikpati, Gilman et al. are not even mentioned. Worst is the situation with the CME's that are mentioned casually at one place and are dealt with in no more than half a page, under the title "corpuscular clouds"! In spite of the fact that many very important papers have been published on that topic, this part contains three references only; one is about a 2001 paper that is neither essential nor really known in solar studies; another refers to Kuiper, 1953 (but it should be Kiepenheuer, 2003) and the third mentions a remark by Lockyer about prominences. The reader wonders what that remark has to do with solar corpuscular emission. There, it is said that Lockyer studied the corona between 1860 and 1930. He died, though, in 1920.

In short, reading the solar part makes one think of a student who, in writing a thesis, has diligently and desperately collected material from internet and uncritically pasted things together. The book would have gained in value if the author, knowing of his own limitations, would have sought co-operation with one of the excellent solar physicists in his country.

The consequence of this weakness is that the author seeks relationships between sunspots and climate. Any solar physicist could have immediately answered that such a relation cannot exist. A sunspot is a cool area on the solar surface where upward energy transport is inhibited by a magnetic field. It is the surrounding fields that are important. There, the physics happens.

The climate part, full of statistics, seems more elaborate and shows where the scientific interests of the author reside. But there too, a critical evaluation of the physics of the various proposed processes is meagre or lacking. The book ends with a "Synthesis" and that, in turn, ends with a summary stating that "a weak but apparently robust solar signal can be found in various observations using various statistical tests."

Cornelis de Jager  
Royal Netherlands Institute for Sea Research  
P.O. Box 59  
1790 AB Den Burg  
The Netherlands  
e-mail: cdej@kpnplanet.nl

