



Space storms are roaring through the solar system: why do we earthlings care?

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Our modern hi-tech society has become increasingly vulnerable to disturbances from outside the Earth system, in particular to the space storms initiated by explosive events on the Sun. Indeed, “space weather” influences the performance of space-borne and ground-based technological systems and can even affect human life and health.

The economic consequences are enormous. That’s one reason why space weather and its predictability have recently attained major attention. Another reason is the new quality of observational data that have been obtained over the decade from new space-based instruments. They have provided unprecedented breath-taking views of the Sun and its surroundings. Further, they allow major advances in the understanding of the processes that tie our home planet to its parent star, the Sun.

One of the pioneers in this exciting new science discipline had been Julius Bartels in the 1930s. He inferred the existence of “M-regions” on the Sun that emit particle streams capable of stirring moderate but distinct geomagnetic activity. We know now that Bartels was strikingly right. However, we have to admit that to this day many of the physical processes involved are still not sufficiently understood, and further fundamental research work is badly needed.