

# Solar eruptions as triggers of earthquakes

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Investigations regarding the link of earthquakes to solar activity carried out during the last decade in different countries are based on the analysis of statistical data  $\Sigma E(t)$  and  $W(t)$ . As established, the overall seismicity of the Earth and its separate regions depends of an 11-year long cycle of solar activity. There are no experimental data confirming cause-and-reason bonds between solar eruptions and earthquakes. Actually the experimentally obtained data that are given in the paper may serve the first step while studying solar-terrestrial cause-and-reason interrelations of “solar eruption and lithosphere, radon and earthquakes”. To conduct such study, further collection of experimental data is needed. For the first time, through radon constituent of terrestrial radiation objectification has been made of elementary lattice of the Hartmann’s network contoured out by biolocation method.

Hartmann’s lattice networks are attributed to the category of global energetically active ones which structuralization occurs at the level of force-fields-energetic, electromagnetic, radiation, and so on. Universally they are expressed at a landscape level and indoors.

Hartmann’s network is characterized by highest density on the earth’s surface. The elementary cell of Hartmann’s network sized 2x2,5 is oriented NS-WE (fig.1).

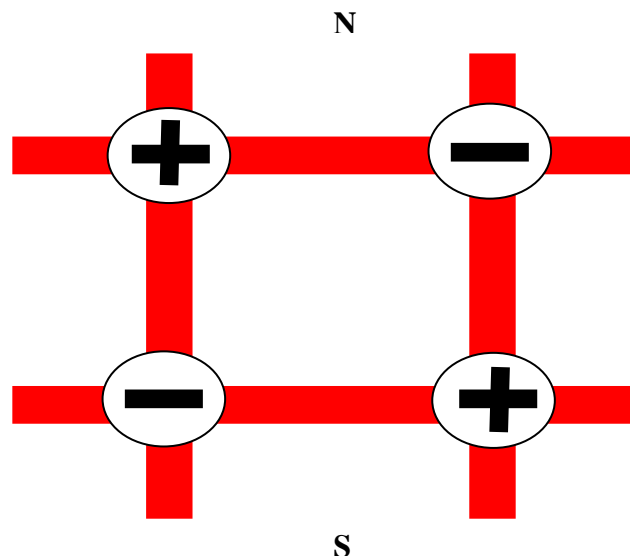
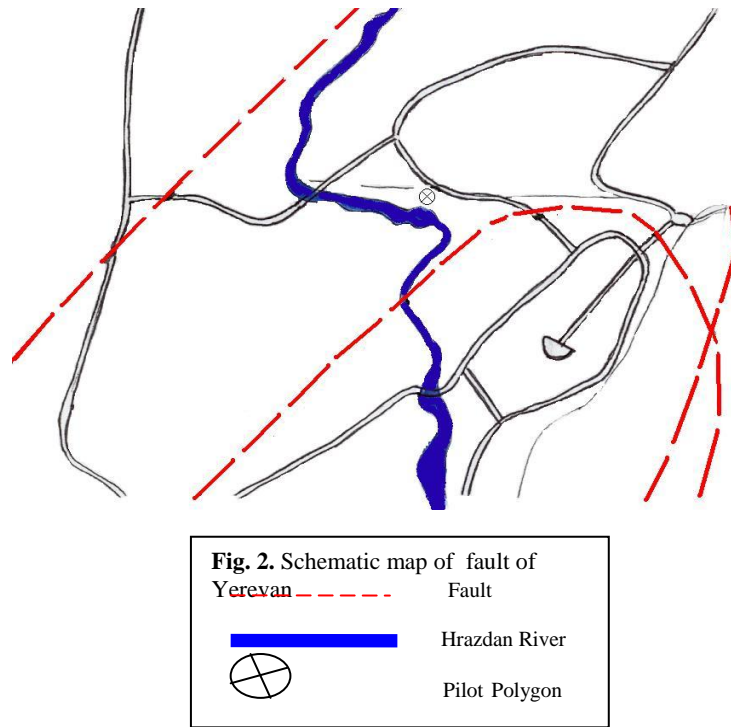


Fig. 1 Hartmann’s global network cell

Like elementary cells of minerals crystal lattice, Hartmann’s network is characterized by polarity of nodes. As calculations show, throughout the area of 1km<sup>2</sup> 200 000 elementary cells of Hartmann’s network are singled out, thus making about 30\*10<sup>12</sup> cells all over continental surface only.

The testing site is located in the park zone within the limits of Yerevan. In geological structure of the city’s territory soil-covered upper-miocene, quaternary basalts and rocks of salt and gypsum-bearing layers occur. According to geology-geophysical data, a number of faults cross the city’s territory, to which Hrazdan fault and Yerevan flexure identified in the central part of the city, are attributed. Its boundary lies between bared quaternary lava sediments in the north and sedimentary layer in the south (fig. 2). The testing site is located southwest some 2km far from Hrazdan fault and about 700m - from Yerevan flexure. Bedrocks of the testing site are basalts.



As found out the ratio of the concentrations of radon in polarized node of Hartman's network -  $C_{Rn(+)} / C_{Rn(-)}$  determine the dynamics of solar-earth relationships. Before solar eruption, during various geomagnetic situations,  $C_{Rn(+)} / C_{Rn(-)} > 1$  (fig. 3, 3.A, 3.B, 3.C).

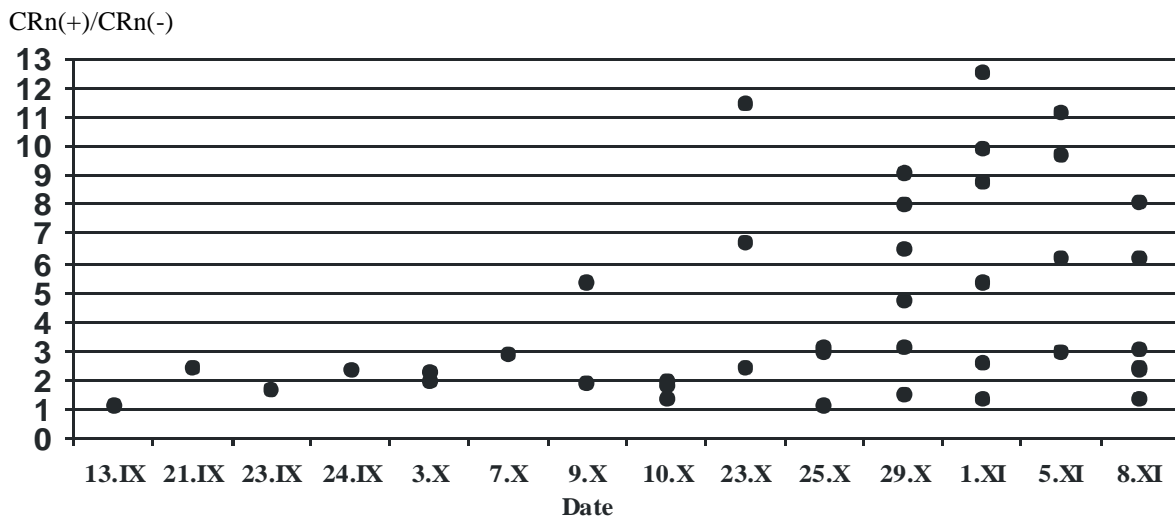


Fig. 3 Relations of radon concentrations in positive and negative nodes of Hartmann's network

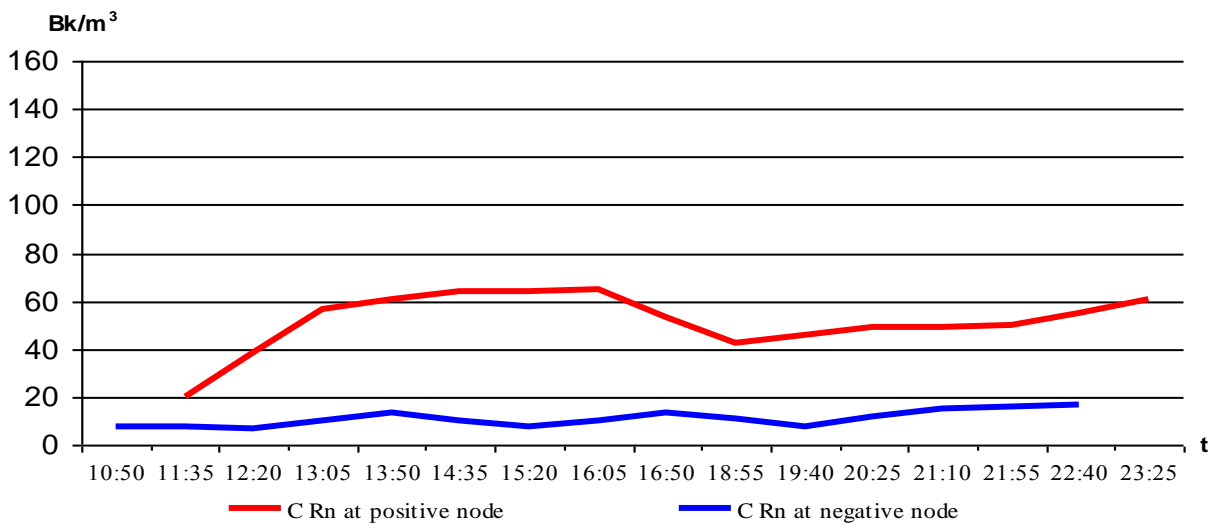


Fig. 3A Variations of radon concentrations in stable geomagnetic conditions 29.10.2003

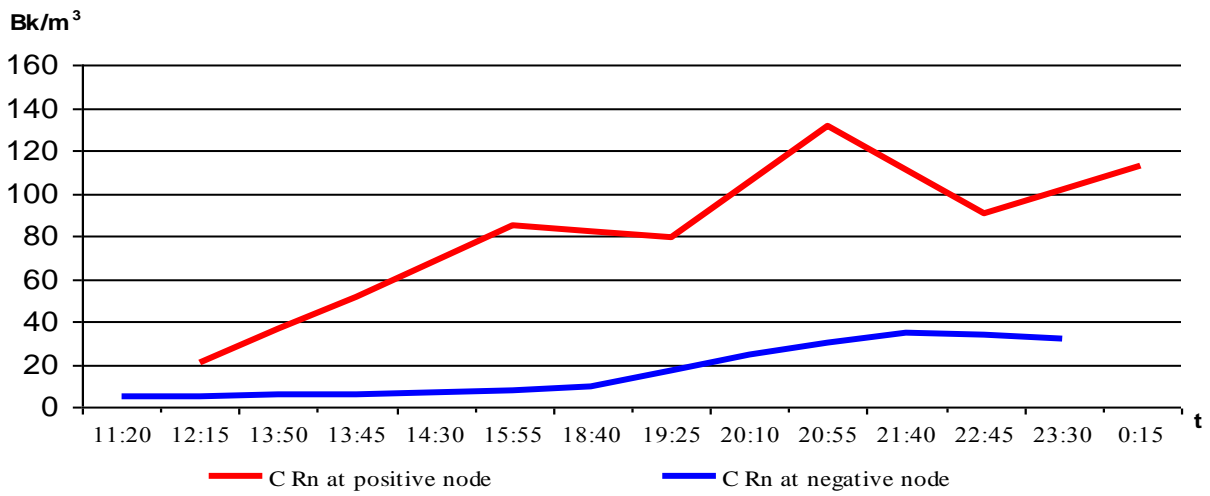


Fig.3.B Variations of radon concentrations before solar eruption 01.11.2003

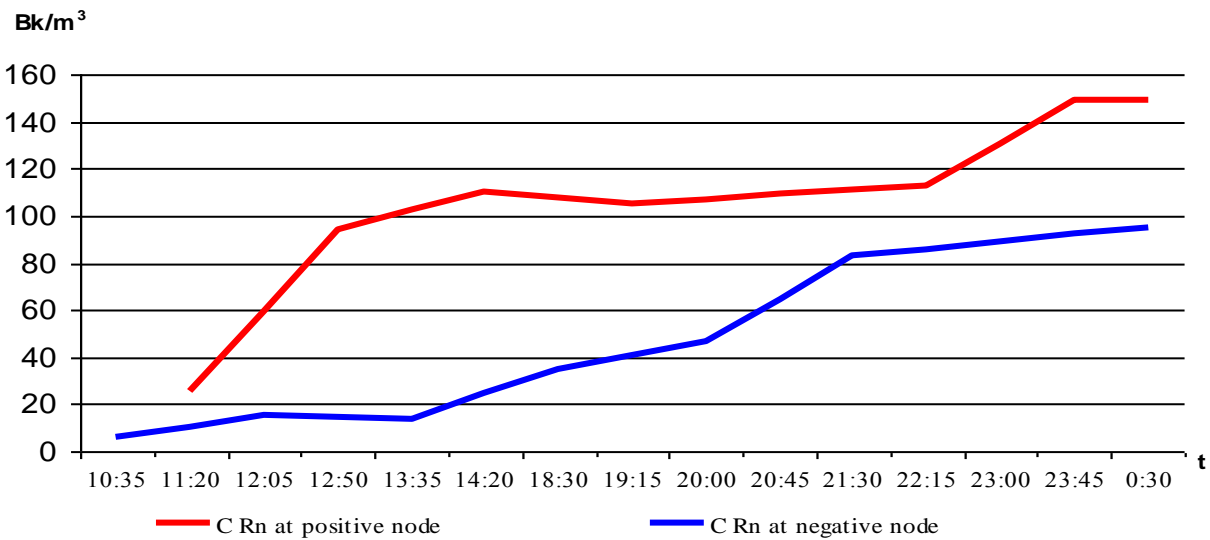


Fig. 3.C Variations of radon concentrations after solar eruption 08.11.2003

After solar eruption, over a seven days the change of polar nodes is occurred and  $C_{Rn(+)} / C_{Rn(-)} < 1$ . (fig.4) However after some period it recovered to  $C_{Rn(+)} / C_{Rn(-)} > 1$  again. (fig. 4.A).

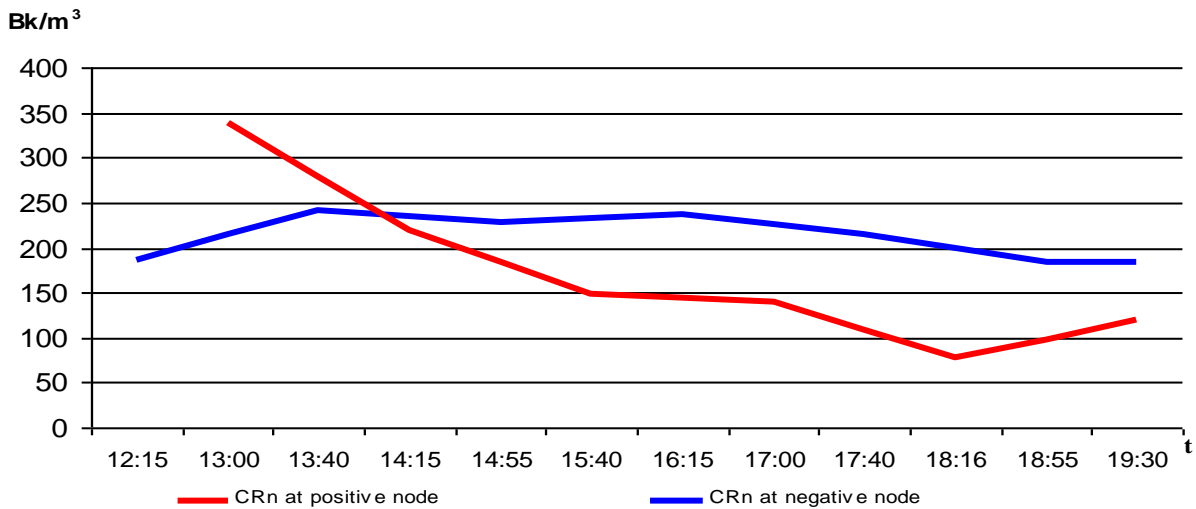


Fig.4 Change of nodes after solar eruptions 11.11.2003

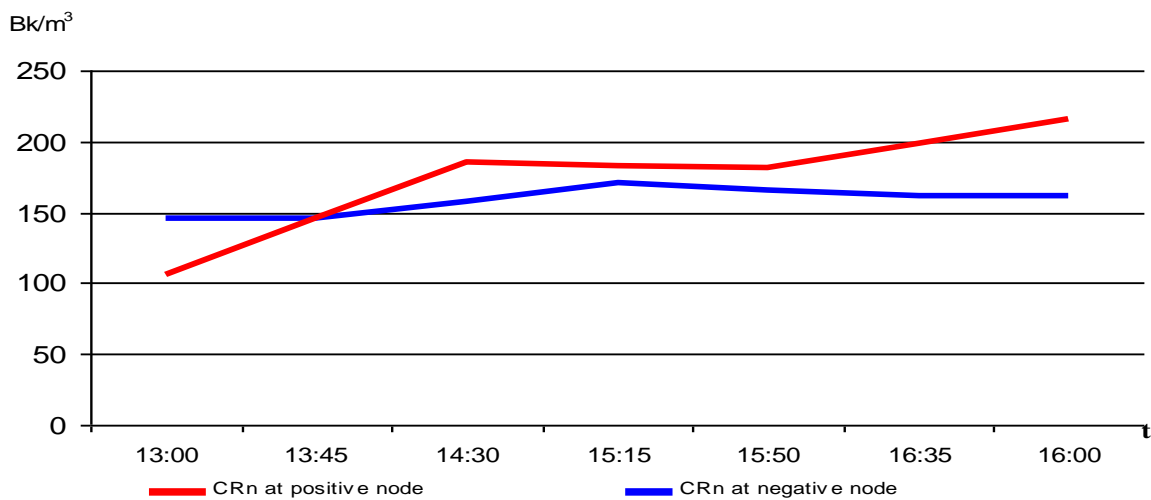
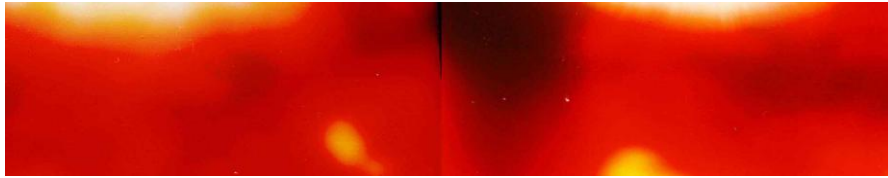


Fig. 4. A Recovering of nodes after seven days 17.11.2003

Such kind of ratio changes attests short-run disequilibrium of cosmo-earth relationships in ionosphere, atmosphere and lithosphere.

A negatively polarized node of elemental cell of Hartmann's lattice is a channel for outer cosmic signal reception, this clearly being seen in photos in connection with solar eruptions in first decade of November 2003 and 2004 (fig.5). The photos for 2003 show that solar eruption-induced corpuscular energetic streams impacted the lithosphere for 5 months and more after the event. A positively polarized node serves a signal generation channel and is characterized by monogenous, exclusively terrestrial radiation in absence of any cosmic component and sharply contrasting increase in radon level during geomagnetic storms and solar eruptions.



A. Stable geomagnetic condition (a negative node) 25.06.2003



B. Stable geomagnetic condition (a positive node) 25.06.2003



C. Insignificant geomagnetic condition (a negative node) 17.07.2003



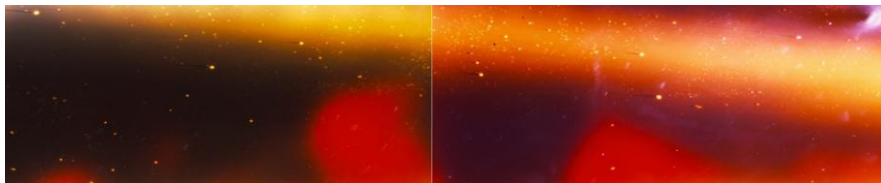
D. Traces of  $\alpha$  particles 17.07.2003



E. 2 months after solar eruption (a negative node) 16.02.2004



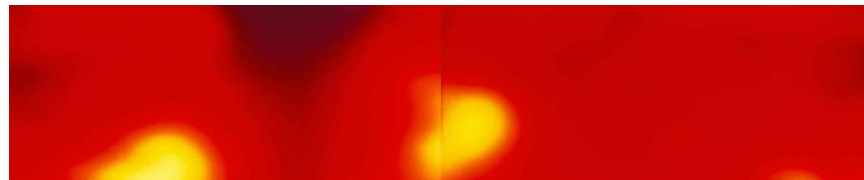
F. 2 months after solar eruption (a positive node) 16.02.2004



G. 5 months after solar eruption, stable geomagnetic condition (a negative node) (210m depth) 05.03.2004



H. 5 months after solar eruption, stable geomagnetic condition (a positive node) 05.03.2004



I. 6 months after solar eruption, stable geomagnetic condition (a negative node) 07.05.2004

**Fig.5 Electromagnetic radiation and cosmic component**

This disequilibrium, along with long-run attack of upper part of lithosphere by corpuscular flow of energy from solar eruption, provokes natural disasters, which begin in a month after solar eruptions.

Of the three types of rapidly running processes conditioned by solar-terrestrial relationships earthquakes are attributed to rapidly running destructive processes that occur in the most intense way at the juncture of tectonic massifs, along transformed and deep faults. The basic factors provoking the earthquakes are both magnetic-structural effects and a long-term (over 5 months) bombing of the surface of lithosphere by highly energetic particles of corpuscular solar flows, this being approved by photography. As a result of solar eruptions that occurred from 29 October to 4 November 2003, a sharply contrasting increase in soil radon was established which is an earthquake indicator on the territory of Yerevan City. A month and a half later, earthquakes occurred in San-Francisco, Iran, Turkey, on the territory of Armenia. These results were received during 2004 and 2005 years monitoring too.

The results obtained allow considering solar eruptions as shooting mechanism for activation of terrestrial tectonic processes. They provoke global tension of the Earth's crust with centers of destructive processes that are the consequences of global occurrence of solar-terrestrial relationships.

Findings allow considering the global energetic Hartman's network as a matrix of energy communicational system of the Earth.

#### Research direction

1. Studying hierarchy of energetically active global lattices (Hartmann, Kurri etc.) as channels of solar – terrestrial relationships.
2. Radon of Hartmann's global lattices and solar – terrestrial relationships (ecological and seismological aspects).