

## **Coupling of the Matched Gravity and Electromagnetic Fields of the Sun with Jupiter and its Moons Together in Nearest Portion of Jupiter's Orbit to the Sun as the Main Cause of the Peak of Approximately 11 Yearly Solar Cycles and Hazards from Solar Storms**

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On March 13, 1989 the entire province of Quebec Blackout by solar storm during solar cycle 22. The solar storm of 1859, also known as the Carrington event, was a powerful geomagnetic solar storm during solar cycle 10. The solar storm of 2012 during solar cycle 24 was of similar magnitude, but it passed Earth's orbit without striking the plane. All of these solar storms occurred in the peak of 11 yearly solar cycles. In this way, the White House in its project which is focusing on hazards from solar system, in a new strategy and action plan to increase protection from damaging solar emissions, should focus on coupling of the matched Gravity and Electromagnetic Fields (GEFs) of the Sun with Jupiter and its moons together.

On the other hand, in solar system, the Jupiter's gravity has largest effect to the Sun's core and its dislocation, because the gravity force between the Jupiter and the Sun is 11.834 times, In addition overlapping of the solar cycles with the Jupiter's orbit period is 11.856 years. These observable factors lead us to the effect of the Jupiter and Sun gravity fields coupling as the main cause of the approximately 11 years duration for solar cycles. Its peak in each cycle is when the Jupiter is in nearest portion to the Sun in its orbit. In this way, the other planets in their coupling with Sun help to the variations and strengthening solar cycles. [Gholibeigian, 7/24/2015 <http://adsabs.harvard.edu/abs/2014EGU>].

In other words, the both matched GEFs are generating by the large scale forced convection system inside the stars and planets [Gholibeigian et. al, AGU Fall Meeting 2015]. These two fields are couple and strengthening each other. The Jupiter with its 67 moons generate the largest coupled and matched GEFs in its core and consequently strongest effect on the Sun's core.

Generation and coupling of the Jupiter's GEFs with its moons like Europa, Io and Ganymede make this planet of thousands of times brighter and many times bigger than Earth as the strongest variable GEFs in solar system after the Sun.

For example, Ganymede is the largest moon of Jupiter and in the Solar System. Completing an orbit in roughly seven days. It means that it generates 52 GEFs oscillations (loading, unloading) per year in solar cycle while it is rotating around the Jupiter. New observations of the planet's extreme ultraviolet emissions show that bright explosions of Jupiter's aurora by the planet-moon interaction, not by solar activity [Tomoki Kimura, JAEA].

Coupling of Jupiter's GEFs and its moons with the Sun generate very strong GEFs and approximately 11 yearly solar cycles. The peaks of each cycle is when the Jupiter passes from the nearest portion of its orbit to the Sun. which some of its peaks generate gigantic solar storms and hazards to the Earth.

The Earth passes from between of Sun and Jupiter eleven times in each solar cycle and may be under shooting of storms from the both side specially during 2-3 years in cycle's peak.