

Basics of astrophysics revisited. III

Supercritical Sun idea.

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Supercritical state of solar matter might overcome some remaining difficulties of liquid Sun concept.

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In a series of papers Robitaille, operating with data from diverse branches (from spectroscopy to helioseismology), have shown illogic of standard gaseous solar model. After rethinking of solar physics in extraordinary breadth Robitaille argued about metallic hydrogen Sun. Metallic hydrogen Sun model however may face problems explaining a) internal mass and energy transfer, b) some solar surface phenomena and c) Cartesian solar vortex properties (which celestial mechanics requires).

Since helioseismology in fact has narrated about largely homogenous Sun for decades, supercritical state of solar interior comes into question because of such known properties of supercritical matter as 1) liquid like densities, 2) gas-like viscosities, 3) a line of parameters of supercritical liquids that are between of these of liquids and gasses and 4) fast changes of parameters of supercritical liquids with changes in pressure.

We consider spectroscopically determined anomalous temperatures of solar corona as an artifact, caused by effect of turbulence of solar matter. Analysis shows, that solar energetic is within early inspiration of Nikolai Kozyrev- low temperature steady state machine with effectivity some 0.27 W per cubic meter. (Jed Rothwell once compared the energy density of the Sun to that of a compost heap). In solar energetic some electro-magnetic mechanisms might be involved, indeed.

References

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