Unified Electromagnetic Theory of Matter and Light

Section D — Structure and Dynamics of the Universe

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Section D considers astronomical phenomena through the proposed electromagnetic framework. Six articles examine pulsars, gamma-ray sources, magnetic deflection, sunspots, Cepheids, and supernovae, with emphasis on testable physical hypotheses and their observational implications.

Part D1 — Pulsar Pulses from Magnetospheric Resonance Page

This article develops a proposed explanation of pulsar pulses based on resonant oscillations of a neutron-star magnetosphere rather than necessarily on rapid stellar rotation. It considers periodic electromagnetic focusing, the role of source motion in arrival-time modulation, and conditions under which repeated pulses may reach a distant observer.

Part D2 — Gamma-Ray Source Page:

This article investigates an alternative mechanism for intense gamma-ray emission in which source motion and propagation-time effects may concentrate electromagnetic radiation into brief observed pulses. It examines critical acceleration, temporal compression, and possible connections between gamma-ray bursts and pulsar emission within the proposed framework.

Part D3 — Magnetic Deflection of Electromagnetic Waves Page:

This article introduces a proposed interaction between structured electromagnetic waves and nonuniform external magnetic fields. It examines transverse field asymmetry, magnetic gradients, the resulting change of propagation direction, and the stability of the wave trajectory. The proposed mechanism provides the theoretical basis for the following studies of solar and stellar optical phenomena.

Part D4 — Sunspots Page:

This article applies the magnetic-deflection hypothesis to the umbra and penumbra of sunspots. It considers the possible alignment and capture of photospheric radiation, its guiding along magnetic loops, and its release during magnetic disturbances. Differences in capture and escape are investigated as possible contributions to sunspot darkness, boundaries, and filamentary structures.

Part D5 — Cepheid Page: —

This article explores the observed variability of Cepheid stars through a proposed combination of stellar motion, directional radiation transport, and magnetic-field effects. It investigates whether the geometry and timing of radiation received by an observer can contribute to the shapes and periods of Cepheid light curves, providing a further observational test of the mechanisms introduced in the preceding articles.

Part D6 — Supernova Page:

This article proposes the Classical Velocity-Dependent Propagation (CVDP) model to explain supernova light-curve duration and spectral evolution. It examines how emitter-dependent propagation speed and subsequent coherent equalization could affect arrival times, and predicts a progression from blueshifted to redshifted radiation.