Electromagnetic Postulates and Their Measurement

Part C1 - Preservation and Reconstruction of Wave Structure

This paper examines how optical elements preserve or reconstruct the spatial structure of electromagnetic waves. The proposed model distinguishes an existing wavelength from the frequency at which a moving element encounters the wave. Prisms, mirrors, and Fabry–Pérot interferometers are treated as structure-preserving, whereas a diffraction grating is hypothesized to disrupt the incident field and reconstruct a wave with a new wavelength. This distinction yields a testable prediction for relative motion and provides the conceptual foundation for the differential astronomical measurement proposed in Part C2.

Part C2 - Measurement of the Propagation Velocity of Astronomical Light

This paper proposes a differential Fabry–Pérot experiment to measure the propagation velocity of incoming astronomical light independently of the conventional assumption of vacuum light speed. Two simultaneous components of stellar radiation are compared: an unmodified beam and a zero-order beam transmitted through a diffraction grating. Under the reconstruction hypothesis developed in Part C1, their wavelength difference reveals the incoming propagation velocity. A symmetric telescope-pupil arrangement and the high-proper-motion star Groombridge 1830 provide a practical test, with either a null result or a reproducible difference offering a discriminating outcome.

Part C3 - State of the Solar Photosphere from Spectral Measurements

This paper applies the differential interpretation of astronomical spectra developed in Part C2 to measurements of the solar photosphere. Within the proposed model, center-to-limb spectral variations indicate collective plasma velocities of several hundred kilometres per

second. The analysis distinguishes bulk motion from microscopic thermal motion, allowing substantial plasma velocities without requiring correspondingly extreme electron temperatures. It further proposes that collective motion enhances turbulence, recombination, excitation, and other radiative interactions. Spectral interpretation and the resulting account of visible photospheric luminosity are examined as mutually consistent elements of the model.

Part C4 - Proper Time and Physical Clock Measurement

This paper distinguishes the physical accumulation of atomic-clock cycles from coordinate descriptions of time. A clock produces one local record for a given pair of events; its measured interval and relativistic proper time refer to that same record. Different reference frames may assign different coordinate-time intervals, but consistent descriptions must reproduce the clock's accumulated cycles. The analysis emphasizes that predictions of relativistic clock differences require comparison of physical records, not merely coordinate expressions. Space-based experiments, including ACES, are identified as opportunities to test these distinctions directly.