

## PFTG Simulation Validation Table (C1)

Fig C1: Gravitational Lensing - Shows  $\text{grad}(\Phi)$  bends light paths

Fig C2: Scalar Gravitational Waves - Emitted from orbiting sources via pressure field

Fig C3: Orbit Drift - Deviation from Newtonian gravity

Fig C4: Post-Newtonian Precession - Mercury perihelion shift via scalar corrections

Fig C5: Entropy Gradient Force - Force from entropy differentials

Fig C6: Galaxy Rotation Curves - Flat velocity curves without dark matter

Fig C7: Photon Birefringence -  $\Phi$ -F interaction alters light phase

Fig C8: CMB Ripple Seeding - Density ripples from pressure waves

Fig C9: Solar System Formation - Fragmentation into protoplanets

Fig C10: Planck-Scale Quantization - Uncertainty from vacuum structure

Fig C11: Photon Sphere / BH Edge - Stable orbits via scalar  $V_{\text{eff}}(r)$

Fig C12: Inertial Ripple Drag - Resistance from vacuum ripple coupling