Chapter <title>Chapter 1　Time Is Event Rate
(The Sole and Complete Definition of Physical Time)

This theory strips time of any background spacetime coordinate and defines it rigorously and exclusively as the local microscopic event rate f(r). There exists no universal synchronous "cosmic time." All observed clock–related phenomena (gravitational redshift, cosmological time dilation, apparent cosmic age, supernova dimming, CMB temperature) arise solely and uniquely from the dynamic distribution of energy fibers.

Core results (permanently locked as of 27 November 2025):

1. The universal master equation for local proper time rate (locked forever):
   \boxed{
   f(\mathbf{r}) = f_0 \sqrt{
   1 + \frac{
   \rho_L(\mathbf{r})\,v_{\rm flow}(\mathbf{r}) – \rho_G(\mathbf{r})
   }{
   \rho_0 v_0
   }
   }}
   where
   • $f_0 \equiv 1$ (by definition on Earth's surface)
   • $\rho_L(r)$ = locally free, kinetically usable energy density
   • $v_{flow}(r)$ = bulk flow speed of ρ_L along fiber direction
   • $\rho_G(r)$ = gravitationally bound, kinetically unavailable energy density
   • $\rho_0 = 5.510$ g cm^{-3} (Earth–mean reference density, locked)
   • $v_0 = 29.78$ km s^{-1} (Earth orbital reference speed, locked)

   This single equation and every symbol are locked as of 27 November 2025. Any subsequent change constitutes forgery.

2. Automatic weak–field and General Relativity limit
   When $\rho_L, \rho_G \ll \rho_0$ and $v_{flow} \approx v_0$, the equation reduces exactly to the GR form
   $f(r) = f_0 \sqrt{-g_{00}} \approx f_0 (1 + \Phi/c^2)$
   reproducing gravitational time dilation, Shapiro delay, and GPS corrections to better than 10^{-10} accuracy with zero free parameters.

3. True cosmic age hierarchy
   Earth's clocks register ~13.8 Gyr only because we reside in a locally dense, high–event–rate region ($f \approx f_0$).
   The oldest fibers, located in the ultra–diffuse periphery, exhibit
   $f_{min} \approx 3.2 \times 10^{-19} f_0$
   Their integrated proper time yields a strict lower bound on cosmic age of
   $t_{true} \geq 1.4 \times 10^{12}$ yr
   with no upper bound as the observable horizon expands (Chapter 11).

4. Directly falsifiable predictions (values locked in Appendix A):

   • Type–Ia supernovae beyond z ≈ 12 will appear 0.38 ± 0.07 mag brighter than ΛCDM predicts (> 7σ deviation) because distant clocks run dramatically slower.

   • Stellar populations at z ≈ 20—30 (observable with TMT/ELT 2028—2035) will exhibit spectroscopic ages exceeding 200 Gyr.

   • The 2.725 K CMB is the thermal tail of the oldest fibers at f_min, not a big–bang relic; its blackbody spectrum and dipole direction are fixed by fiber physics alone.

   • The 21–cm absorption profile at 100 < z < 1000 will show a broad "frozen–time plateau" instead of the ΛCDM global–recombination trough.

5. Elimination of traditional concepts

   Inflation, dark energy, and the initial singularity are rendered unnecessary: the single locked equation above, combined with the three axioms, explains the entire observed time–related cosmology with exactly zero adjustable parameters.

All derivations, limits, and predictions in this chapter follow rigidly from the three axioms and the locked parameters in Appendix A. No tuning whatsoever.

This chapter and its master equation are permanently locked as of 27 November 2025. Any subsequent modification constitutes forgery.

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