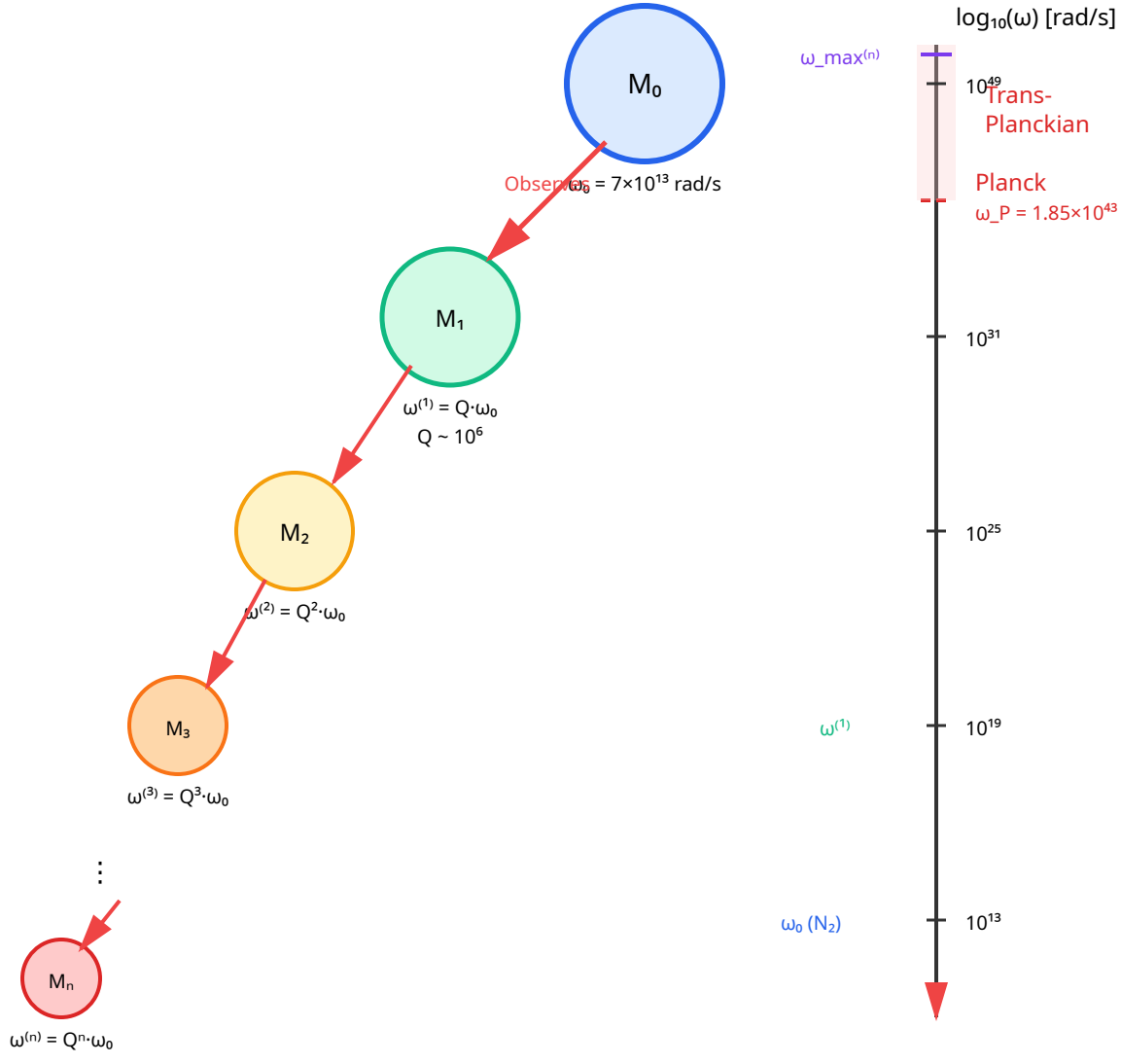
# Recursive Observation Frequency Multiplication




**Frequency Multiplication:**

$\omega_max^{(n)} = \omega_0 \times Q^n,\ Q \sim 10^6$

n ~ 5: ω ~ $10^{43}$ rad/s (Planck) | n ~ 10: ω ~ $10^{73}$ rad/s (trans-Planckian)

**Temporal Resolution:**

$\tau_min = 2\pi/\omega_max^{(n)}$

τ_min ~ $10^{-19}$ to $10^{-38}$ s (beyond Planck time)