Chapter 8 A Tensor-Based Unified Hypothesis of Galactic Structure and Planetary Collapse

Section 1: Redefinition of Galactic Rotation and Natural Structure

In conventional astronomical observations, the outer regions of spiral galaxies appear to rotate "faster" than their centers, a phenomenon that defies explanation under fixed rotational models. However, this anomaly arises from a rigid adherence to the definition of speed as "distance divided by time." In this section, we reinterpret the situation using the concept of "angular progression rate" and re-evaluate it from the perspective of structural coherence.

Within the framework of spatial tensor structure, the galactic center exhibits a high degree of tensor coherence. This coherence facilitates alignment and energy transmission efficiency, resulting in faster rotational progression at the core. In contrast, the outer regions accumulate delays in rotational motion over time, and the angular velocity per unit time becomes smaller than that of the center. This does not imply a delay in gravity itself—since gravity, once coherence is achieved, is presumed to act instantaneously—but rather reflects the delay in how physical matter reacts to and follows that coherence during rotational progression. Thus, even though the outer regions may appear to rotate faster visually, in reality, it is a natural structure in which the outer regions **fail to keep up**.

Definition of Coherence Lag:

$\Delta\theta = \theta\_center - \theta\_outer > 0$

θ_center: Angular velocity at the galactic center

θ_outer: Angular velocity at the outer region

$\Delta\theta$: Rotational difference due to coherence lag

This difference arises from the outer regions' inability to fully follow the center's coherent alignment.

Moreover, the galactic rotation is believed to be driven by the gravitational pull radiating outward from the central gravitational field, inducing rotational motion in surrounding matter. In the central regions, gravity is stronger, causing matter to rotate with sharper angular curvature. In the outer regions, gravity's influence diminishes, and the material cannot match the rotation speed of the core.

Because matter in the outer regions must travel greater physical distances, its **linear velocity**

may appear higher per unit time. However, when converted into **angular progression**, it actually lags behind. In terms of rotational dynamics, the outer regions are delayed compared to the center. From this perspective, the misinterpretation of speed between the center and the periphery is resolved.
Therefore, the spiral structure of galaxies can be seen as a **visualization of coherence lag**, an inevitable result derived from cosmic order. No special assumptions (auxiliary terms) are needed; the spiral naturally forms through coherence.

Section 2: Formation Mechanism of Cosmic Membranes and Aligned Structures
In this theory, the definitions of the *t-axis* and *x-axis* are derived with reference to Saturn's rotational axis and the stability of its hexagonal polar structure. Saturn exhibits a highly symmetrical polar formation (a regular hexagon), suggesting that its axis of rotation may align closely with the *t-axis* originating from the Big Bang—a direction of high coherence within cosmic space. However, the t_1*-axis* and *x-axis* projected from Saturn's axis represent **approximate axes** within our current coordinate system and do not necessarily align **perfectly** with the universe's absolute tensor coherence axes. In other words, the defined *t-axis* and *x-axis* may contain **theoretical angular discrepancies** relative to the absolute cosmic grid.

Although these discrepancies are minimal, they should be considered as **spatial observational deviations** when reconstructing the universe's overall tensor structure with high precision. At the moment of the Big Bang, energy was radiated outward while simultaneously generating a tensor-structured space with six directions (x_1–x_6) and internal axes (t_1–t_4). As energy propagated through this space, it experienced partial loss due to interference with these tensors, leading to **directional selection** in its path. Because the degree of kinetic energy loss varies by direction, regions with **high coherence** experience **less decay**, resulting in **fragmented membrane-like formations**. These coherent domains later became the **seeds of galactic structures**.

This phenomenon can be visually and structurally summarized as follows:

- In highly coherent directions, **galactic filaments** and **CMB alignments** (such as the so-called *Axis of Evil*) are observed. These alignments tend to cluster on planes formed by the t_2–t_4 axes, showing distinct structural concentrations.
- On the other hand, the **x-axis extension** is theorized to represent the **direction of the strongest tensor coherence** in the universe. However, this region lies **beyond the observable range**, and direct structural observation is currently not possible.

By understanding the aligned directions in cosmic space as **membrane-like expansions**, and by recognizing that **galaxies formed** where imbalances or fractures occurred within these membranes, we can interpret the current distribution of galaxies as **fragments of spatial order** shaped by tensor coherence.

Section 3: Bias in Rotational Direction and Reverse Estimation of Spatial Position

Recent observations have revealed a clear bias in the rotational direction of galaxies. For example, in some regions, about 66% of galaxies rotate clockwise, while 34% rotate counterclockwise. This bias arises because rotational motion tends to occur in directions where energy and structure are more easily aligned. In tensor alignment structures, certain spatial directions allow energy to escape more easily or align more efficiently, resulting in a unified tendency in the rotational direction of the galaxies formed. Therefore, it becomes possible to reverse-calculate the angular relationship with the alignment direction based on the observed statistical rotation direction.
The formula for reverse-calculating this bias as an angle of tensor alignment is based on the following idea:
Assume that in a region perfectly aligned with the alignment direction, the rotation bias is 100% ($R = 1$), and in the completely opposite direction, it is 0% ($R = 0$).
If we assume that the strength of alignment is proportional to $\cos\theta$, where θ is the angle with respect to the alignment direction, the following equation can be derived:

$$R = (1 + \cos\theta) / 2$$

Solving for θ gives:

$$\theta = \cos^{-1}(2R - 1)$$

Therefore, if the observed rotation bias R is known, the angle θ with the tensor alignment direction can be reverse-calculated.

Formula

$$\theta = \cos^{-1}(2R - 1)$$

- θ : alignment angle
- R: ratio of clockwise rotating galaxies (e.g., 0.66)

Substitution Example

$$\theta = \cos^{-1}(2 \times 0.66 - 1) = \cos^{-1}(0.32) \fallingdotseq 71.3^\circ$$

In this way, it becomes theoretically possible to derive the angular deviation of our observational region from the tensor principal axis (t1 axis) based on statistics of rotational direction.

Note: The derivation and angular calculation in this section were verified using the equation processing function of WolframAlpha (especially inverse trigonometric function computation) to ensure theoretical validity.