

# The Repulsive Model: Rethinking Black Holes as Expulsive Events and Gravity Resets

*A New Cosmology*

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## Abstract

This paper presents an alternative framework for interpreting black holes, supernovae, and gravitational collapse through what is termed the **Repulsive Model**. Unlike the conventional view that treats black holes as terminal gravitational sinks [1], this model posits that they function as **expulsive phenomena** — localized regions where gravity undergoes a reset or polarity inversion. These events produce a net outward force, making them active contributors to cosmic expansion rather than passive endpoints of stellar evolution.

Extending this perspective to stellar death, the Repulsive Model challenges the prevailing core-collapse paradigm of supernovae [2]. It proposes that a **neutron star forms prior to** the explosive phase, and that its sudden emergence — marked by an intense gravitational spike — destabilizes surrounding planetary bodies. These bodies are then drawn inward and violently collide with the nascent neutron star, producing the observed ejecta, asymmetries, and kinetic energy traditionally attributed to internal shockwave rebound. This gravitational collapse–then–collision sequence provides an alternative explanation for features such as metal-rich debris fields and non-spherical blast patterns.

The model reinterprets the expansion of the universe not as the effect of a mysterious, homogeneous "dark energy," [3] but as the cumulative result of countless localized **gravitational rupture events** embedded in the fabric of spacetime. It provides a unified lens through which to view the Big Bang, black holes, and supernovae — not as collapses into denser states, but as **repulsive transitions** that expel matter and energy outward. The Repulsive Model introduces falsifiable predictions and offers a reinterpretation of several observed astrophysical phenomena that remain poorly explained under the standard  $\Lambda$ CDM framework.[4]

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## Core Principles of the Repulsive Model

Concept	Repulsive Model Interpretation
Black Hole	A gravitational reset point—not a sink, but a source of expulsive force
White Dwarf	A fuel-less but energy-filled star sustained by active gravity
Black Dwarf	A fully dead star: no fuel, no energy, but gravity remains intact
Neutron Star	Gravity becomes too strong, compressing energy into extreme density
Supernova	Caused by gravity failure due to energy overload; a repulsive release
Expansion	Driven by local expulsions, not a cosmological constant
Dark Energy	The aftershock or residual field of repulsion events

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## 1. Introduction

In standard general relativity, black holes represent regions where spacetime curvature becomes infinite and from which no information or matter can escape [1]. However, this view leads to unresolved paradoxes, such as the black hole information paradox [5], the nature of singularities [6], and the role of gravity in early universe expansion.

The Repulsive Model challenges the assumption that gravity is always attractive. Instead, it proposes that black holes — and similar extreme gravitational phenomena — are not final endpoints but transition events in spacetime where gravitational polarity resets or becomes repulsive, potentially serving as localized drivers of expansion or energy dispersal.

## 2. Black Holes as Repulsive Events

### 2.1 Standard View

In general relativity, the Schwarzschild solution describes black holes as regions enclosed by an event horizon, beyond which nothing—not even light—can escape [1]. This interpretation treats black holes as terminal gravitational endpoints formed through extreme gravitational collapse [6]. However, attempts to reconcile general relativity with quantum mechanics, such as Hawking radiation, have introduced paradoxes like the information loss problem, underscoring gaps in the current understanding [5].

### 2.2 The Repulsive Model's Premise

The Repulsive Model proposes that under conditions of extreme density, spacetime undergoes a **phase transition**, reversing its gravitational behavior. Rather than forming singularities, black holes become **gravitational reset points** that emit — not absorb — matter and energy. These localized repulsive events may cumulatively drive cosmic expansion, offering an alternative to the concept of a uniform, mysterious dark energy [4].

This concept resonates with ideas in **loop quantum gravity**, where the classical singularity is replaced by a quantum bounce [7], and with speculative constructs like **gravastars** and **firewalls**, which question the conventional picture of black hole interiors and event horizons [8].

In this framework, black holes do not trap light but **repel it**. Their observational darkness results not from absorption but from **exclusion** — photons are dynamically denied entry. An analogy can be drawn from ultra-black materials like **Vantablack**, which scatter or redirect light so effectively that none reaches the observer's eye [9]. The Repulsive Model asserts that black holes perform a similar function via **spacetime inversion**.

## 3. Supernovae Reinterpreted

### 3.1 Standard View

The prevailing model of Type II supernovae involves the collapse of an iron core in a massive star. Once nuclear fusion ceases, gravity overwhelms the core, compressing it into a neutron star or black hole. The infalling outer layers then rebound off the stiffened core, assisted by an outburst of neutrinos, resulting in an explosive ejection of stellar material [2]. This process produces both the remnant and the observable explosion, with the remnant assumed to form *after* the explosive phase.

### 3.2 Alternative View: Collapse Before the Explosion

In contrast, the Repulsive Model proposes a reversed sequence. It suggests that the neutron star forms *first*—not as a by-product of the explosion, but as a silent, rapid collapse event. The resulting spike in gravitational intensity destabilizes nearby orbiting bodies—planets, moons, or gas disks—which are then violently drawn inward.

These objects collide with the nascent neutron star, and **the collisions themselves**, not internal core rebound, generate the observed ejecta, shockwaves, and asymmetries. This interpretation offers a more coherent explanation for:

- **Asymmetric explosions** [7]
- **Unusual metallicity** in surrounding debris
- **Variable time delays** between collapse and visible outburst

**The Repulsive Model aligns with ongoing theoretical work on delayed supernovae and fallback accretion, where explosive energy may not be immediately released following core collapse [10]. It extends this by suggesting the delay is not due to slow accretion, but to a catastrophic impact event initiated by external bodies falling into the gravitational well.**

### 3.3 Cosmic Expansion Through Repulsion

The Repulsive Model posits that cosmic expansion is not the result of a homogeneous, unknown dark energy field, but of cumulative **gravitational inversions** — localized rupture events in spacetime. These begin with the Big Bang and continue through black holes, which act as **expulsive catalysts**, not gravitational contradictions. Expansion is not a smooth stretching of spacetime, but a cascade of **shockwave-like repulsive events** [4].

### 3.4 Galactic Cores and Sagittarius A\*

Mainstream astrophysics holds that a supermassive black hole, Sagittarius A\*, resides at the center of the Milky Way, acting as a gravitational anchor. However, if it were a pure sink, the galaxy should be slowly collapsing inward. Yet:

- Spiral arms persist or expand
- No long-term contraction is observed
- Outer stars and gas clouds remain stable

The Repulsive Model resolves this by proposing Sagittarius A\* is a **gravitational reset engine**, periodically releasing repulsive pulses that maintain and shape galactic structure. Observed high-energy outflows and jets from galactic centers may be evidence of such expulsive activity [11].

Observation	Mainstream View	Repulsive Model Interpretation
Galaxy isn't collapsing	Balanced by angular momentum and dark matter	Center actively repels
Spiral arms persist or expand	Momentum balance	Repulsive pulses sustain outward flow
Sagittarius A* exists	Supermassive sink	Repulsive core of the Milky Way
Galactic jets and outflows	Accretion-based	Residual repulsion from gravitational resets

### 3.5 Sagittarius A\* as the Milky Way's Origin

Beyond maintaining galactic structure, the Repulsive Model suggests Sagittarius A\* may have **seeded the Milky Way itself**. The proposed sequence:

1. A dense object in a previous structure collapse into a neutron star.
2. Accumulated energy overwhelms gravity, triggering a **gravitational failure**.
3. A repulsive event expels matter and spacetime — forming a spiral ejecta field.
4. The remnant stabilizes as a black hole — Sagittarius A\*.

This process reframes Sagittarius A\* not as a byproduct of galactic evolution, but as a **local Big Bang**, suggesting that galaxies themselves are born from gravitational resets — possibly in a **fractal, self-similar** cosmological structure.

### 3.6 Planetary Aftermath of Collapse

Standard models suggest supernovae unbind stellar systems through sudden mass loss. The Repulsive Model extends this: when a gravitational field collapses, it doesn't merely loosen — it **actively repels**. The shockwave of repulsion violently dismantles planetary systems. This can explain:

- The abundance of **rogue planets**
- **Debris fields** around neutron stars
- The lack of **close-orbit companions** around stellar remnants [12]

### 3.7 Debris Fields as Collapse Products

In classical theory, debris around neutron stars is considered leftover supernova material. Yet, this creates a paradox: if the explosion was powerful enough to eject material at thousands of km/s, why does any debris remain nearby?

The Repulsive Model suggests:

- Neutron stars form first, collapsing inward gravitationally
- Nearby orbiting material (moons, planets, debris) is pulled in and shredded
- The resulting **dense, tightly bound** debris is not a byproduct of explosion, but a **consequence of gravitational destruction**

This better matches observed debris patterns, including:

- Metal-rich disks
- Bound asteroid-like objects
- Asymmetrical fragment dispersal around neutron stars [13]

### 3.8 Heat vs. Gravity: A Field That Can Break

The Repulsive Model introduces a thermodynamic principle: **gravity can fail** when overwhelmed by internal energy. Like heating a magnet past its Curie point, accumulating heat within a neutron star can disrupt gravitational cohesion — triggering a **gravitational breakdown**.

This reverses the standard stellar sequence:

Not: Supernova → Neutron Star

But: Neutron Star → Supernova

In some cases, this failure leads to a complete **gravitational inversion**, producing a black hole:

Neutron Star → Supernova → Black Hole

This process suggests stellar death is not a linear collapse, but a **battle between containment and overload**. Gravity is not immutable — it is a field that can **rupture, invert, or reset**.

### 3.9 What This Explains Better

<b>Problem</b>	<b>Repulsive Model Explanation</b>
Why is the universe expanding?	Local repulsive events like black holes contribute to push
What caused the Big Bang?	A rupture in a prior universe's gravity — a repulsive event
Why is "black" black?	Light is repelled, not trapped
Gravitational lensing patterns?	Light bends at spacetime inversion boundaries
What is dark energy?	Residual field of past gravitational resets

## 4. Cosmological Implications

The Repulsive Model provides a framework that aligns with several unresolved or speculative areas of cosmology:

- The **accelerating expansion of the universe**, inferred from Type Ia supernova redshifts [3]
- The concept of **dark energy** as a repulsive force pervading spacetime [4]
- Theoretical models that propose a **cyclic universe** or **quantum bounce** to avoid singularities [7]

Rather than attributing cosmic acceleration to a mysterious uniform field, the Repulsive Model reframes it as the cumulative result of **localized gravitational resets** — expulsive events occurring throughout spacetime. This shifts the focus from one inflationary event to a dynamic, distributed engine of expansion.

## 5. Predictions and Tests

The Repulsive Model yields several **falsifiable predictions**, allowing it to be tested observationally:

- **Black hole jets** may not arise purely from accretion processes but may reflect **repulsive field dynamics**. Their structure and composition may show signatures inconsistent with inflow-dominated models [11].
- **Exoplanetary debris** should be observable near young neutron stars, not as explosion remnants but as **infalling planetary material** destroyed during the neutron star's rapid formation phase [13].
- **Anisotropic gravitational waves** from core-collapse events could indicate non-spherical asymmetries caused by external body impacts, not just internal fluid instabilities — challenging the assumptions of standard rebound models [2].

These predictions provide potential avenues for validating or refuting the Repulsive Model using next-generation observatories and gravitational wave detectors.

## 6. Philosophical Implications

If gravity can reverse — if creation arises from **repulsion** rather than collapse — then the universe is not a dying engine, but a **pulsating network of renewal**. It is not winding down, but still **exploding from the inside out**, driven by gravitational failures that reset and expel spacetime.

This perspective implies a **cyclical or generative cosmos**. Black holes may not be endpoints, but **gateways** — ruptures that seed entirely new spacetimes. In this view, each black hole could mark the beginning of a new universe, just as our own may have emerged from such an event in a parent cosmos.

The Repulsive Model thus invites a radical reinterpretation of cosmology: not as a narrative of collapse and decay, but one of **rejection, renewal, and recursion** — where death is a mechanism of rebirth, and gravity is both creator and destroyer.

## 7. Conclusion

The Repulsive Model does not reject the foundation of modern physics — it **reorients** it. By proposing that gravity can rupture, invert, or reset, the model reframes black holes, neutron stars, and supernovae not as endpoints of collapse, but as engines of **expulsion and renewal**. These events are not passive consequences of mass and density, but **active forces** that reshape spacetime and drive cosmic evolution.

Rather than invoking invisible entities or unfalsifiable constants, the Repulsive Model draws from **observable phenomena**: asymmetric supernovae, debris disks around neutron stars, rogue planets, galactic outflows, and the expanding fabric of the universe itself. It offers a vision of **cosmic dynamics rooted in repulsion** — not in gravitational pull, but in gravitational failure.

Black holes, in this light, are not dead ends. They are **beginnings**. The universe, far from winding down, is still **exploding from within** — not collapsing inward, but **pulsing outward** through recursive cycles of gravity and release.

While the Repulsive Model remains speculative, it introduces testable predictions and offers a coherent alternative to many open questions in cosmology. It invites us to reconsider the nature of gravity not as a fixed, immutable force — but as a **field that can break, flip, and create**.

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