

Special Issue on **Black Holes: Insights and Enigmas**

CALL FOR PAPERS

When a star exhausts its internal thermonuclear fuel at the end of its life, it becomes unstable and gravitationally collapses inwards upon itself to leave a small dense remnant core. If the core's mass is more than about three times the mass of our sun, the equations of Einstein's theory of general relativity show that the force of gravity will overwhelm all other forces and produce a black hole: an object of extremely intense gravity from which nothing, not even light, can escape.

While originally black hole solutions were treated with skepticism as to their physical reality, over time, they have become an accepted part of physics. Black holes were first used as a theoretical means for understanding the nature of real versus coordinate singularities. In the 1970s, with the discovery that black holes have an entropy and temperature, they became a means of investigating ideas about the theory of quantum gravity (not yet formulated). Black hole entropy (the so-called Bekenstein entropy), Hawking temperature, and Hawking radiation also led to the information loss paradox which has various conjectured solutions like firewall scenario, black hole complementarity, holographic principle, black hole remnant, and so forth. In short, black holes provide and will continue to provide a multifaceted window to increase our understanding of gravity under a broad range of conditions.

In this special issue, the focus will be on insights and enigmas of the black holes. Research and review papers written not only by experts, but also by young researchers are welcome.

Potential topics include but are not limited to the following:

- ▶ Stability and quasinormal modes of black holes
- ▶ Greybody factors
- ▶ Gravitational lensing
- ▶ Black holes as particle accelerators
- ▶ Geodesics of black holes
- ▶ Black hole radiation
- ▶ Black hole formation in high energy collisions
- ▶ Black hole solutions in alternative gravity theories
- ▶ Thermodynamics of black holes
- ▶ Black holes in higher/lower dimensions
- ▶ Black holes and child universes
- ▶ Black holes and gravitational waves
- ▶ Black holes and strings
- ▶ Black hole information paradox
- ▶ Black holes and high energy physics

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ahp/bhie/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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