

Review Form 1.7

Journal Name:	International Astronomy and Astrophysics Research Journal
Manuscript Number:	Ms_IAARJ_101299
Title of the Manuscript:	ON THE EXISTENCE OF A HOLLOW NEUTRON STAR
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory REVISION comments</p> <p>1. Is the manuscript important for the scientific community? (Please write a few sentences on this manuscript)</p> <p>2. Is the title of the article suitable? (If not please suggest an alternative title)</p> <p>3. Is the abstract of the article comprehensive?</p> <p>4. Are subsections and structure of the manuscript appropriate?</p> <p>5. Do you think the manuscript is scientifically correct?</p>	<p>stars contributes to our knowledge of fundamental physics, stellar evolution, astrophysics, and cosmology. It helps of the universe and provides insights into the nature of matter, gravity, and the extreme physical conditions that neutron stars play a crucial role in various astrophysical phenomena, such as pulsars (rapidly rotating neutron stars from magnetic radiation) and X-ray binaries (systems where a neutron star accretes matter from a companion star). helps us understand processes like stellar evolution, accretion physics, and the dynamics of compact binary also provide insights into the overall structure, evolution, and dynamics of galaxies and the universe as a whole. This possible existence of "hollow neutron stars". Studying hollow neutron stars, or neutron stars with a maximum density in their center, would be of significant interest and importance because it would challenge our current understanding of the behavior of matter under extreme conditions.</p> <p>suggest using a more prudent title: "The Existence of Hollow Neutron Stars".</p> <p>in a very general way (however, it contains many typos). In order to attract the reader's interest more, in my abstract explain in the abstract the added value of the present work with respect to the findings of the work of J. Ni.</p> <p>4. In my opinion, two important sections are missing: a) A section explaining the physical significance of the existence of hollow neutron stars is missing (see suggestion 7.d below). b) A section that concretely explains how the hollow neutron star can be detected through observations of electromagnetic counterparts by LIGO and VIRGO is also missing.</p> <p>5. The mathematical manipulations are quite simple. However, the real issue is not mathematics but its correctness from a physical point of view. To the best of my knowledge, there is no established scientific evidence or widely accepted theoretical framework for the existence of hollow neutron stars.</p> <p>6. <i>Definitively, the list of references is not exhaustive. I would suggest citing also the following works.</i> [1] J. Arons, ApJ, 388, 561 (1992). [2] P. Becker, ApJ, 498, 790 (1998). [3] U Kraus, The Astroph. J., 563, 289, (2001). [4] G. Kupa, Phys Rev D, 77, 023001 (2008). [5] G.Y. Shao and Y.X. Liu, Phys Rev C, 79, 025804 (2009). [6] C.H. Lenzi, and A.S. Schneider, Phys Rev C, 82, 015809 (2010). [7] Y.C. Wei et al., Sci China Phys Mech Astron, 53, 1939 (2010).</p> <p>7. The following suggestions are intended to clarify some points and fill some gaps in the work. 7a. The layout of the work is of poor quality; this makes the work not easy to read. 7b. This work makes heavy use of the work of Jun Ni. For easy reference, it is advisable that the author spends a few lines to summarize the main results of the work of J. Ni. <i>NI studied the general relativistic field equations for neutron stars. It is found that there are solutions for the equilibrium mass distribution without an upper mass limit. The solutions correspond to stars with a void in the center. As the vacuum boundary changes, the star's mass and number of particles can approach infinity.</i> redibly dense objects formed from the remnants of massive stars that have undergone gravitational collapse. The thought to consist predominantly of densely packed neutrons, hence the name. The density tends to be highest at the center and gradually decreasing as you move outward. However, the exact distribution of density within a neutron star is still an open question and variations and complexities may not yet be fully understood. For completeness, the author is invited to quote the following: 7d. <i>Please mention, albeit very briefly, why it is important to study neutron stars, including hollow neutron stars.</i> i) Fundamental Physics. The existence of hollow neutron stars would necessitate a re-evaluation of our current models of neutron star formation and interior physics. ii) Equation of State. The internal structure and density distribution of a hollow neutron star would be governed by</p>	

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<p>6. Are the references sufficient and recent? If you have suggestions of additional references, please mention in the review form.</p> <p>7. Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments</p>	<p>its equation of state, which describes the relationship between the pressure, density, and composition of matter under extreme conditions.</p> <p>iii) Astrophysical Consequences: The discovery of hollow neutron stars would have implications for various astrophysical phenomena associated with neutron stars.</p> <p>iv) Cosmological Significance: Neutron stars, including hypothetical hollow neutron stars, play a role in cosmology as potential sources of gravitational waves, as well as contributors to the overall mass and energy budget of the universe.</p>	
<p><u>Minor</u> REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>1. English should be widely revised; several typos were found.</p>	
<p><u>Optional/General</u> comments</p>	<p>The research subject (investigation of neutron stars) is interesting and topical. However, the present work contains several flaws that prevent its publication in its present form. The author is encouraged to take into account the suggestions expressed above.</p>	

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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