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Journal Name:	**Physical Science International Journal**
Manuscript Number:	**Ms_PSIJ_45815**
Title of the Manuscript:	**Origin and Early Evolution of Terrestrial Planet Atmospheres and Oceans**
Type of the 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)*
Compulsory REVISION comments	**My main problem with this review paper is that it focuses exclusively on a single hypothesis and ignores an ocean of data that provides substantial insight into the early evolution of planetary oceans and atmospheres.** **All terrestrial planetary atmospheres are secondary depleted and "re-fertilzied" by solar winds and planetary ocean degassing. Although impact origin of some atmospheric components is well-substantiated by data, the exact nature of these impacts (single impact or multiple bombardments, number, size and chemical composition of possible impactors, timing, etc.) is subject of the on-going rigorous debate. In my opinion, any review paper of this nature should at the very least reflect these discussions and opinions.** **This paper completely ignores most of available geologic, geochemical and isotopic data that suggests that early stage accretion processes not quite unlike to processes in carbonaceous chondrites are quite capable of accumulating substantial amount of water to be later released via continuous degassing of planetary interiors. In fact H isotope composition (D/H ratios) and Xe-I isotope systematics suggest that, based on multiple lines of geochemical evidence impact contribution can be limited to 50% of terrestrial water (Musselwhite et al., 1991, Nature, v. 352, p. 697; Morbidelli et al., 2000, Meteorites and Planetary Science, v. 35, p. 1309; Sarafian et al., 2014, Science, v.346, p. 623-626 and many many others). Some geochemical modelling suggests that the impact contribution can be possibly limited to 10-15% (Owen and Bar-Nun, 2001, Origins Life Evol. Biosphere, v.31, p.435) and Earth was acrreting "wet" throughout its planetary growth and early history (Drake, 2005).** **Evidence from isotopic geochemistry of halogens and noble gases also suggests very early (4.4-4.45 Ga or so) presence of primitive atmosphere and large bodies of water (Musselwhite et al., 1991; Lecluse and Robert, 1994, Geochimica et Cosmochimica Acta, v. 58, p. 2927-2939).** **This is also supported by high-precision dating of early zircons from quartzites in the Murchison district of Western Australia (Mojzis et al., 2001, Nature, v.409, p. 178-180) and from Jack Hills metasediments (Wilde et al., 2001, Nature, v. 409, p. 175-178), which suggests interaction with seawater at 4.3-4.4 Ga.** **This plethora of geochemical data suggests that absoption of water vapour onto grains in the accretion disk and later-stage release of this water to form oceans and atmosphere is as valuable hypothesis as any impact model (Drake and Righter, 2002, Nature, v. 416, p. 39; Drake, 2005, Meteoritics & Planetary Science, v. 40, p. 519-527). This is fully supported by seismic evidence (Schmandt et al., 2014, Science, v. 344, p. 1265-1268), water content in nominally anhydrous minerals throughout Earth's mantle (Bell and Rossmann, 1992, Science, v.255, p. 1391-1397) and occurrence of ringwoodite inclusiions in superdeep (sub-lithospheric) diamonds (Perason et al., 2014, Nature, v.507, p. 221-224.** **I suggest that author considers this information and tries to incorporate it into his or her review to make it relevant to readers which are used to multiplicity of evidence and conceptual thinking in such important matters as origin and evolution of planetary atmospheres and oceans.**	

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	Some serious work and inclusion of multiple lines of evidence into the discussion	
Minor REVISION comments		
Optional/General comments		

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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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