Abstract Submitted for the FWS15 Meeting of The American Physical Society

**Pure Gravitational Field** FLORENTIN SMARANDACHE, University of New Mexico — The General Theory of Relativity asserts that it is possible to have a pure gravitational field, without any matter at all, which acts as a source for itself. Then the following questions arise: What does happen to the cosmic travelling small, medium and massive objects and to the atomic and sub-atomic particles in this pure gravitational field? Do they fall to the bottom of the pure gravitational field, and do they eventually form a compact cosmic body whose own gravitational field is this pure gravitational field? Does it exist any experiment proving that gravity influences light speed or light trajectory? Does indeed gravity attract light? {The light escaping or not a gravitational field in General Theory of Relativity or in a Black Hole can be considered if it has been experimentally proven that light is influenced by gravity.}Also, if mass produces gravity and gravity produces mass, then it results that pure gravitational field will produce/generate some mass. How? Will objects, dust, particles be attracted in and condensed into a compact body inside of this pure gravitational field?

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