

Selected papers

astrophysics, cosmology, general physics

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Preface

This selection contains articles that I wrote during the first two decades of the 21st century. Its subjects are astrophysics, cosmology and general physics, distributed in four parts. Part I is my “Eddington trilogy” on astrophysics and cosmology. Part II discusses the inconsistencies I see in Einstein’s realm of relativity and physics. The third part is about the general issue of life in the universe. I conclude, in part IV, with three articles on various subjects, namely, general physics, speculative cosmology and the still very current question about the reality of the expanding universe.

There are materials for all tastes and levels of education, but they are intended primarily for readers in the physical sciences.

Most of the articles were written when I lectured relativistic cosmology at the undergraduate physics course of the Physics Department at the Federal University of Minas Gerais, Belo Horizonte, MG, Brazil, during the period of 2001 to 2010. I would like to thank my students of all semesters, during the 10 years I dedicated to the course, for their enthusiastic participation in every activities and for the encouragement they gave me, which led to the compilation of this selection of papers.

I am also grateful to Prof. Reynier Peletier of the Kapteyn Astronomical Institute, University of Groningen, The Netherlands, for allowing me to use the Kapteyn Institute computer, which was very helpful, especially in the preparation of several figures and diagrams that appear in some of the articles.

The cover is a painting by my wife Lu Soares entitled “*Pôr-do-sol acima do mar*” (“Sunset over the sea”), for which I am very grateful. This and her other paintings can be seen at <https://www.youtube.com/watch?v=619TBeEzIKY>.

All chapters of this selection appear on my personal electronic page at the Physics Department (<http://www.fisica.ufmg.br/dsoares/index-e.html>) in the sections “*Topics in relativistic cosmology*” and “*Texts & News*”.

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