

1. Record Nr.	UNINA9910814885703321
Autore	Gonzalo Julio A (Julio Antonio)
Titolo	The intelligible universe : an overview of the last thirteen billion years / / Julio A. Gonzalo
Pubbl/distr/stampa	Singapore ; ; Hackensack, NJ, : World Scientific Pub. Co., c2008
ISBN	981-279-412-3
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (368 p.)
Disciplina	523.01
Soggetti	Cosmology Astrophysics Cosmic physics Cosmic background radiation Big bang theory Intelligent design (Teleology)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Prologue to 2nd Enlarged Edition; Acknowledgements and Credits; The Intelligible Universe (Shanghai/Madrid 1993); 1. Man and His Universe; 1.1 Einstein's Eternal Mystery; 1.2 From Antiquity to the XVI Century; 1.3 From Galileo and Newton to Kirchhoff; 1.4 The XX Century; Bibliography; 2. The Importance of Precision; 2.1 The Last Word in Physics; 2.2 Precise Astronomical Observations; 2.3 The New Generation of Telescopes; Bibliography; 3. Masses, Distances and Times in the Universe; 3.1 Masses; 3.2 Distances; 3.3 Times; Bibliography; 4. Relativistic Cosmology 4.1 Relativity, Special and General 4.2 The Cosmological Dynamic Equations; 4.3 The Matter Dominated and the Radiation Dominated Eras; 4.4 The Cosmic Baryon to Photon Ratio; Bibliography; 5. The Fundamental Physical Forces in the Universe; 5.1 Gravitational, Electromagnetic and Nuclear Forces; 5.2 Conservation Laws; 5.3 Elementary Particles; 5.4 Universal Constants; 5.5 Understanding the Universe, and Open-Ended Process; Bibliography; 6. Cosmology and Transcendence; 6.1 Towards the Confines of the Universe; 6.2 Observable Data and Big Bang Model

6.2.1 Approximately isotropic distribution of galaxies in space; 6.2.2 Universal recession of the galaxies; 6.2.3 Relative abundance of 4He and other primordial light elements; 6.2.4 Cosmic background radiation; 6.3 Implications of Contemporary Cosmology; 6.4 The Physical Universe and Its Creator; 6.5 God and the Scientists; Bibliography; The Cosmic Background Radiation (El Escorial 1993); 7. The COBE Project, by John C. Mather; 8. COBE Observations of the Early Universe, by George F. Smoot; 8.1 Introduction; 8.2 COBE Mission; 8.3 DMR Instrument; 8.4 DMR Limits on Potential Systematics; 8.5 DMR Observations; 8.6 DMR Result Discussion; 8.7 DIRBE Measurements; 8.8 FIRAS Instruments Descriptions; 8.9 FIRAS Measurements; 8.10. FIRAS Interpretation; 8.11 Summary; Bibliography; The Last Thirteen Billion Years... (Krakow, 1998/Madrid, 2002); 9. Unexpected Coincidence between Decoupling and Atom Formation Times; 9.1 Introduction; 9.2 Radiation/Matter Equality Temperature; 9.3 Atom Formation; 9.4 Concluding Remarks; Bibliography; 10. An Amazing Story: From the Cave Man to the Apollo Mission; Bibliography; 11. From the Big Bang to the Present; Bibliography; 12. Astrophysical Cosmology Around Year 2000 AC; 12.1 The COBE Project; 12.2 The Hubble Space Telescope; 12.3 The Spacial Mission Hipparcos; Bibliography; The Microwave Anisotropy Probe (Singapore/Madrid, 2005); 13. The Report of the WMAP's First Year Observation in the NY Times: 02/12/2003; Bibliography; The Medieval Roots of Contemporary Science (Oviedo, 2007); 14. Why Not in China?; 14.1 Why Not in China; 14.2 Early Medieval "Natural Philosophers"; Bibliography; 15. Tomas Aquinas and Roger Bacon; 15.1 Tomas Aquinas and the Ways to God; 15.2 Roger Bacon and the Experimental Method; Bibliography

Sommario/riassunto

This interesting book reviews WMAP's main results (2003) and discusses in detail how the accurate qualitative results for the "age" of the universe and the Hubble constant were anticipated in an article published five years before in Acta Cosmologica, Krakow. In the final chapter on "Cosmic Numbers", it is shown that, as a result of the coincidence at decoupling time between atom formation and matter/radiation equality, a reasonable cosmic justification for the mass ratio of protons and electrons is obtained.
