Record Nr. UNINA9910437975903321 Autore Kwok Sun Titolo Stardust: the cosmic seeds of life / / Sun Kwok Pubbl/distr/stampa Berlin; New York, : Springer, c2013 **ISBN** 3-642-32802-4 Edizione [1st ed. 2013.] Descrizione fisica 1 online resource (272 p.) Astronomers' Universe, , 1614-659X Collana Disciplina 576.839 Soggetti Extraterrestrial life Life - Origin Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto 1. Where do we come from? -- 2. Rocks and dust in the planetary neighborhood -- 3. Impacts from beyond -- 4. Descendants of stars --5. Glowing in the dark -- 6. Star dust in our eyes -- 7. The oldest and brightest -- 8. Neon signs in the sky -- 9. Stars as molecular factories -- 10. Smoke from stellar chimneys -- 11. Gems from Heaven -- 12. Diamonds in the sky -- 13. A mysterious red glow -- 14. A celestial origin for oil? -- 15. Organics in our Solar System -- 16. Stardust in our hands -- 17. Bacteria in space? -- 18. Comets: messengers from the past -- 19. Where do oceans come from? -- 20. Playing God with primordial soup -- 21. Stardust and origin of life -- 22. Our place in the Universe -- 23. Bibliography -- 24. Appendix I. Scientific notation -- 25. Appendix II. Units of measurement -- 26. Appendix III Color and Temperature -- 27. Appendix IV: Naming convention of astronomical objects -- 28. Appendix V Elemental abundance -- 29. Appendix VI Mass and energy -- 30. Glossary. Sommario/riassunto How did life originate on Earth? For over 50 years, scientists believed that life was the result of a chemical reaction involving simple molecules such as methane and ammonia cooking in a primordial soup. Recent space observations have revealed that old stars are capable of making very complex organic compounds. At some point in their evolution, stars eject those organics and spread them all over the Milky

Way galaxy. There is evidence that these organic dust particles actually reached the early Solar System. Through bombardments by comets and

asteroids, the young Earth inherited significant amounts of stardust. Was the development of life assisted by the arrival of these extraterrestrial materials? In this book, the author describes stunning discoveries in astronomy and solar system science made over the last 10 years that have yielded a new perspective on the origin of life. Other interesting topics discussed in this book. The discovery of diamonds and other gemstones in space The origin of oil Neon signs and fluorescent lights in space Smoke from the stars Stardust in our hands Where oceans come from The possibility of bacteria in space About the author Sun Kwok is a leading world authority on the subject of astrochemistry and stellar evolution. He is best known for his theory on the origin of planetary nebulae and the death of Sun-like stars. His most recent research has been on the synthesis of complex organic compounds in the late stages of stellar evolution. He is the author of a number of books, including Cosmic Butterflies: The Colorful Mysteries of Planetary Nebulae.