Energy Resources for Human Settlement in the Solar System and Earth’s Future in Space

Edited by William A. Ambrose, James F. Reilly II, and Douglas C. Peters
# Energy Resources for Human Settlement in the Solar System and Earth’s Future in Space

**AAPG-Astrogeology / EMD Memoir 101**  
**Text Released: April 1, 2013**

## Table of Contents

**Preface**  
William A. Ambrose, James F. Reilly II, and Douglas C. Peters .................................................................

**Chapter 1.** The Significance of Lunar Water-Ice and Other Mineral Resources for Rocket Propellants and Human Settlement of the Moon...  
William A. Ambrose, EMD Past President, Chair, EMD Coal Committee, and Senior Geoscientist, Bureau of Economic Geology, University of Texas, Austin, TX.................................................................

**Chapter 2.** Lunar Helium-3 Energy Resources...  
Harrison H. Schmitt, NASA Apollo 17 Astronaut, Senator from New Mexico and Professor, University of Wisconsin.......

**Chapter 3.** Mining of Helium-3 on the Moon: Resource, Technology, Commerciality – A Business Perspective...  
Dieter Beike, International Energy Consultant, Houston, TX........................................................................

**Chapter 4.** The Near-Earth Asteroids on the Pathway to Earth’s Future in Space...  
Bruce L. Cutright, Senior Geoscientist, Bureau of Economic Geology, University of Texas, Austin, TX............

**Chapter 5.** Hydrocarbon System Analysis for Methane Hydrate Exploration on Mars...  
Michael D. Max, Stephen M. Clifford and Arthur H. Johnson, MDS Research, St. Petersburg, FL; Lunar & Planetary Institute, Houston, TX; and Chair, EMD Gas Hydrates Committee and Hydrate Energy International, Kenner, LA, respectively.....

**Chapter 6.** Remote Sensing of Hydrocarbons on Titan...  
John M. Curchin and Roger N. Clark, University of Idaho, Dept. Physics, Moscow, and U.S. Geological Survey, Denver, CO..............................................................................................................................

**Chapter 7.** Avoiding Extraterrestrial Claim Jumping: Economic Development Policy for Space Exploration /Exploitation...  

**Chapter 8.** The Sun–Moon–Earth Solar-Electric Power System to Enable Unlimited Human Prosperity Biospheric Power and Its Limits for the Production of Net New Wealth...  
David R. Criswell, Professor and Director, Institute for Space Systems Operations, University of Houston, Houston, TX. ..............................................................................................................................

**Chapter 9.** Nuclear Power and Associated Environmental Issues in the Transition of Exploration and Mining on Earth to the Development of Off-World Natural Resources in the 21st Century...  
Michael D. Campbell, Jeffrey D. King, Henry M. Wise, Bruce Handley, James L. Conca and M. David Campbell, EMD Past President and Chair, and members of the EMD Uranium (Nuclear and Rare Earth Minerals) Committee; and members of I2M Associates, LLC, Houston, TX & Seattle, WA............................................................................................................

XXX