

# Institute for Space Systems Operations

## Dr. David Criswell—ISSO Y2001

**D**R. DAVID CRISWELL DIRECTS ISSO AND IS AN ASSOCIATE director of the Texas Space Grant Consortium. His primary research interests are the development of space and lunar industrialization and the economic implications of those developments for Earth. In this period, he also worked with Dr. M. Zolenski (NASA-JSC) on the implications of electrostatic dust motion driven by sunlight to the selective redistribution of surface materials of near-Earth asteroids. He established user rights at the L. B. Johnson Library at the University of Texas at Austin. There, he reviewed the 1964-65 White House and Texas Ranch daily logs of President L. B. Johnson to obtain a better understanding of decisions by that administration with respect to the future of the Apollo program. Recent publications, publications immediately forthcoming, and selected presentations on these topics are listed below. He also works with UH and UHCL faculty and staff in pursuing external funding and broadening relations with other research, educational, governmental, and industrial organizations.

During AY2001 ISSO maintained the membership of the University of Houston in the United States Energy Association and the American Astronautical Society. ISSO contributed funds to the UH chapter of Sigma Xi. Dr. Criswell is a member of the American Institute for Aeronautics and Astronautics, the space power committee of the International Astronautics Federation, the American Association for the Advancement of Sciences, and the Houston Chapter of the International Association of Energy Economists.

In support of the Texas Space Grant Consortium, Dr. Criswell directed the organization of the May 17-18, 2001 research workshop on "Life Science and Engineering Support for Long Duration Space Flight" held at the Institute for Advanced Space Studies in Houston. He also participated in the other meetings of the consortium and the Board of Directors.

### Publications

- Criswell, D. R. "Characteristics of Commercial Power Systems To Support a Prosperous Global Economy," 52nd Congress of the Int'l. Astronautical Federation, Toulouse, France, Oct. 1-5, 2001. Paper IAF-01-R.1.03. 7pp.
- . "Energy Prosperity within the 21st Century and Beyond: Options and the Unique Roles of the Sun and the Moon," in *Innovative Energy Strategies for CO<sub>2</sub> Stabilization*. Ed. R. Watts, Cambridge University Press, July 2002. 345-410.
- . "The Lunar Solar Power System, Biospheric-Independence, and the Emerging Two-Planet Economy," Space Studies Institute, 2001 Mtg., Princeton, NJ, May 7-9, 2001. *Space Manufacturing* 13 (2001): 90-96.
- . "Lunar Solar Power System: Industrial Research, Development, and Demonstration," 18th World Energy Congress, Buenos Aires, Argentina, Oct. 21-25, 2001. 17pp <<http://www.wec.co.uk/wec-geis/>>
- . "Solar Power via the Moon," *The Industrial Physicist* (April/May 2002): 14-17. <<http://www.tipmagazine.com/>>

- . "Space Power and Energy," Space Studies Institute 2001 Mtg., Princeton, NJ, May 7-9, 2001. *Space Manufacturing* 13 (2001): 23-24.
- Zolensky, M. E., K. Nakamura, A. F. Cheng, M. Cintala, F. Horz, R. V. Morris, and D. R. Criswell. "Meteoritic Evidence for the Mechanism of Pond Formation on Asteroid Eros," 33rd Lunar and Planetary Science Conf. Houston, TX, March 11-15, 2002. Paper 1593. 2pp.

### Press and web features on Dr. Criswell's work

- Grossman, W. "Moonstruck," *Houston Press* 14.9 (Feb. 28, 2002): cover, 21, 22, 24, 27, 29. <<http://www.houstonpress.com/issues/2002-02-28/index.html>>
- Cook, G. "Moon Boon," *Boston Globe Magazine* (Feb. 3, 2002).
- Metzner, J. (producer) "Lunar Solar Power: Intro.," "Energy for the World," "Silicon Moon," and "Taking the Lid off Earth," (Jan. 1-4, 2001). Radio interviews and transcripts: <<http://www.pulseplanet.com/archive/Jan01/Jan01.html>>

### Presentations

- Criswell, D. R. "Lunar Solar Power @ 2001," Univ. of Houston, Dept. of Physics, Houston, TX, Feb. 27, 2001.
- Criswell, D. R. "Lunar Solar Power @ 2002," Univ. of Texas at Dallas, Physics Colloquium, Richardson, TX, May 2, 2002; Tulane Univ., Dept. of Mechanical Engineering, New Orleans, LA, Jan. 11, 2002.
- Criswell, D. R. "Lunar Solar Power System and Minimization of Carbon Dioxide Emissions in the Production of Commercial Power that Enables a Prosperous Global Economy," American Geophysical Union, Fall Mtg., San Francisco, CA, Dec. 12, 2001.
- Criswell, D. R. "Lunar Solar Power System: Commercial Power that Minimizes Carbon Dioxide Emissions and Enables a Healthy & Prosperous Two-Planet Economy," NASA and Air Force Advanced Technology Working Group, Phoenix, AZ, May 14, 2002.
- Criswell, D. R. "Review of ISSO," Texas Aerospace Commission, Bell Office Building, Austin, TX, March 1, 2002.

### Funding and proposals

- "Use of Meteorites to Elucidate Formation and Characteristics of Ponded Deposits on Asteroids." PI: M. Zolensky, Co-PI: D. R. Criswell, et al.; NASA Research Announcement ROSS-2002, Planetary Geology and Geophysics Panel, April 2002.