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Ascent's Lightweight Thin-Film Solar Selected for Further Evaluation by the Japan Aerospace Exploration Agency (JAXA) for Deep Space Missions

THORNTON, CO -- (Marketwired) -- 12/07/16 -- Ascent Solar Technologies, Inc. (OTCBQ: ASTI), a developer and manufacturer of state-of-the-art, lightweight and flexible thin-film photovoltaic (PV) solutions, announces that the Company was selected by the Japan Aerospace Exploration Agency (JAXA) as part of their next round of evaluations for providing solar technology for an upcoming mission to Jupiter, as well as to address additional missions. This decision followed an earlier round of investigation with promising results, during which the Company's flexible, monolithically integrated copper-indium-gallium-selenide (CIGS) solar module was subjected to environmental extremes, and continued to operate well.

During the first phase of JAXA's evaluation, Ascent's PV was successfully tested below -146°C (-231°F) and up to $+190^{\circ}\text{C}$ ($+374^{\circ}\text{F}$), and to only 4% of the sunlight generally received in earth's orbit. In addition, JAXA has also subjected Ascent's PV to radiation and mechanical testing.

"JAXA's Jovian mission is a testament to the advancements being made in orbit, both in terms of its objectives, as well as the extremes in which the vehicle is required to operate," stated Dr. Joseph Armstrong, Chief Technology Officer and founder of Ascent Solar. "Missions of this type traditionally use fragile crystalline solar cells that require additional structure for protection. Our lightweight, flexible technology can take advantage of novel array construction that provide higher performance in a more economical package. JAXA has decided to investigate lower-cost flexible thin-film solar technology in conjunction with a solar sail concept that was first demonstrated on their IKAROS project in 2010. Our PV will be used in conjunction with a solar sail design that would provide both propulsion, as well as lightweight electrical power for the mission."

A link to the webpage describing the IKAROS (Interplanetary Kite-craft Accelerated by Radiation of the Sun) mission can be found here: <http://www.isas.jaxa.jp/e/enterp/missions/ikaros/index.shtml>

"We are very honored to be selected to work with JAXA in anticipation of the upcoming mission," said Victor Lee, President and CEO of Ascent Solar. "Interest from JAXA in our unique flexible CIGS PV product for high-performance aerospace applications is encouraging, as we believe it will increase awareness of what Ascent's PV has to offer in this challenging aerospace market."

JAXA intends to leverage their existing solar sail technology with lightweight solar components to combine both solar propulsion and solar power generation. As stated by the JAXA Solar Power Sail Team, "We want to develop innovative spacecraft systems with lightweight PV and pave the way for economical high-performance deep space missions."

ABOUT ASCENT SOLAR TECHNOLOGIES, INC:

Ascent Solar Technologies, Inc. is a developer of thin-film photovoltaic modules using flexible substrate materials that are more versatile and rugged than traditional solar panels. Ascent Solar modules were named as one of the top 100 technologies in both 2010 and 2015 by R&D Magazine, and one of *TIME* Magazine's 50 best inventions for 2011. The technology described above represents the cutting edge of flexible power and can be directly integrated into consumer products and off-grid applications, as well as other aerospace applications. Ascent Solar is headquartered in Thornton, Colorado. More information can be found at www.ascentsolar.com and www.enerplex.com.

ABOUT JAPAN AEROSPACE EXPLORATION AGENCY (JAXA):

The Japan Aerospace Exploration Agency (JAXA) was born through the merger of three institutions, namely the Institute of Space and Astronautical Science (ISAS), the National Aerospace Laboratory of Japan (NAL) and the National Space Development Agency of Japan (NASDA). It was designated as a core performance agency to support the Japanese government's overall aerospace development and utilization. JAXA, therefore, can conduct integrated operations from basic research and development, to utilization. More information can be found at <http://global.jaxa.jp>

Forward-Looking Statements

Statements in this press release that are not statements of historical or current fact constitute "forward-looking statements." Such forward-looking statements involve known and unknown risks, uncertainties and other unknown factors that could cause the Company's actual operating results to be materially different from any historical results or from any future results expressed or implied by such forward-looking statements. In addition to statements that explicitly describe these risks and uncertainties, readers are urged to consider statements that contain terms such as "believes," "belief," "expects," "expect," "intends," "intend," "anticipate," "anticipates," "plans," "plan," to be uncertain and forward-looking. The forward-looking statements contained herein are also subject generally to other risks and uncertainties that are described from time to time in the Company's filings with the Securities and Exchange Commission.

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