



**MEMSCAP**  
*The Power of a Small World™*

## **MEMSCAP OPTICAL TECHNOLOGY FINDS EXOPLANETS**

*MEMSCAP provides Boston Micromachines Corporation with Silicon Microchip Deformable Mirrors integrated within the “Gemini Planet Imager”*

**Grenoble, France and Durham, North Carolina, August 4, 2014** – MEMSCAP (NYSE Euronext: MEMS), the leading provider of innovative solutions based on MEMS (micro-electro-mechanical systems) technology, today announced that its optical technology enables/powers the advanced adaptive optics system integrated within the world’s most powerful planet finder.

The Gemini Planet Imager is the next generation adaptive optics instrument built for the Gemini Telescope. The goal is to image extrasolar planets orbiting nearby stars with the ultimate target to produce the first comprehensive survey of giant exoplanets. Gemini Planet Imager has been built by a consortium of U.S. and Canadian institutions, funded by the Gemini Observatory. After more than 6 years of development and integration, the Gemini Planet Imager instrument was shipped to Chile in 2013 and the first science operation started in 2014.

The Gemini Planet Imager consortium built an advanced adaptive optics instrument using a MEMS deformable mirror to remove atmospheric turbulence, and coronagraphic masks to block the diffracted light from the parent star.

The imager uses a Boston Micromachines’ advanced wavefront control device. MEMSCAP has been successfully fabricating Boston Micromachines’ deformable mirrors for more than 15 years for laser communications, vision science and astronomy. Boston Micromachines’ revolutionary mirror arrays extensively use the MEMSCAP optical technology to build a mirror membrane supported by an underlying actuator array. Each actuator in the array can be individually deflected by electrostatic actuation to locally deform the membrane.

“One of the key challenges raised by the Gemini Planet Imager was to build a deformable mirror over an inch in diameter with the 4000 actuators needed to achieve the desired pattern on the mirror surface. Also, this device needed to have unprecedented yield, which was especially challenging for such a large aperture,” says Paul Bierden, president and CEO of Boston Micromachines. “This requires an excellent microfabrication development program and great expertise in the mirror manufacturing process. We had been fortunate enough to be working with MEMSCAP throughout this project as they have both of these attributes.”

“MEMSCAP goal is to be in the business of preserving and improving human life. Our technical contributions are focused for the advancement and welfare of humanity. Integrating our optical technology within the Gemini Planet Imager brings us one step forward and further proves our expertise in manufacturing complex MEMS devices” says Jean Michel Karam, president and CEO of MEMSCAP.

**About Boston Micromachines Corporation**

Founded in 1999, Boston Micromachines Corporation (BMC) is the leading provider of advanced microelectromechanical systems (MEMS) - based mirror products and has expertise in the design of adaptive optics systems and optical instrumentation. By applying wavefront correction to produce high resolution images, BMC devices can be used for imaging biological tissue and the human retina and to enhance images blurred by the earth's atmosphere. The company's suite of award-winning compact DM products is the most cost-effective, highest performance mirrors in the market today. They are widely used to drive scientific discovery in astronomy, laser beam shaping, microscopy, vision science, and support a variety of defense applications. Customers include NASA, UC Berkeley, Lockheed Martin and Boston University. In addition, BMC is involved in the design and construction of advanced optical instrumentation utilizing our deformable mirror technology. BMC has fabricated imaging instruments used for clinical research applications as well as laboratory imaging demonstration, currently in use at select locations. Located in Cambridge, MA, BMC is privately held and offers custom-designed manufacturing services in addition to its portfolio of standard DM products and select optical imaging expertise. For more information on BMC, please visit [www.bostonmicromachines.com](http://www.bostonmicromachines.com).

**About MEMSCAP**

MEMSCAP is the leading provider of innovative micro-electro-mechanical systems (MEMS)-based solutions. MEMSCAP standard and custom products and solutions include components, component designs (IP), manufacturing and related services. MEMSCAP customers include Fortune 500 businesses, major research institutes and universities. The company's shares are traded on the Eurolist of NYSE Euronext Paris (ISIN: FRO010298620-MEMS) and belong to the CAC small, CAC Mid & Small, CAC All-Tradable and CAC All-Share indexes. More information on the company's products and services can be obtained at [www.memscap.com](http://www.memscap.com).

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