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Materion Precision Optics to Support World's Largest Astronomical Filters

MAYFIELD HEIGHTS, Ohio--(BUSINESS WIRE)-- Materion Precision Optics, a Materion Corporation (NYSE:MTRN) business, is set to begin the first phase of manufacturing six of the world's largest precision astronomical filters to date for the new Large Synoptic Survey Telescope (LSST). The LSST is a partnership between public and private organizations, including the U.S. National Science Foundation and the U.S. Department of Energy. The curved filters, 80 cm in diameter and weighing between 15-30 kilograms, will be installed in the Telescope's (3.2 gigapixel) digital camera for a 10-year period to survey and map tens of billions of stars and galaxies.

"Only a few years ago a large filter would have been around 10 cm in diameter. We have repeatedly scaled up to meet the astronomy community's increasing requirement for larger filters," said Michael Newell, President, Materion Precision Optics. "The LSST filters will be the largest we have built and our large optics facility in Westford, Massachusetts is well suited for the task as it was designed specifically for filters of this size."

The coating design and process development phase of the large astronomical filters is being undertaken for the Lawrence Livermore National Laboratory in the Class 1000 cleanroom of the large optics facility. The filters will contain a surface coating uniformity of well under 1 percent and cover spectral wavelengths from ultraviolet to near infrared. The facility will also allow for spectral performance testing of the LSST filters in an operation beam simulation using Materion's newly developed metrology instrument.

Materion's astronomical filters will make it possible for the LSST to document a section of the sky every 20 seconds, amounting to more than 800 panoramic images each night off the El Peñón mountain peaks in northern Chile. In total the telescope is expected to produce 200,000 images (1.28 petabytes) each year, capturing sharp images of objects 10 million times fainter than visible to the human eye.

With over 40 years of experience since its founding as Barr Associates Inc., Materion Precision Optics has been at the forefront of producing large astronomical filters for the space and astronomy industry. Recent work in the large optics facility has included the production of large filters for Subaru Hyper-Suprime Cam (HSC), 60 cm diameter; DECam, 62 cm diameter; Zwicky Transient Facility (ZTF), 49 x 45 cm; Canada France Hawaii Telescope (CFHT) MegaCam upgrade, 30 cm x 35 cm; and many others.

Materion Corporation is headquartered in Mayfield Heights, Ohio. The company, through its wholly owned subsidiaries, supplies highly engineered advanced enabling materials to global markets. Products include precious and non-precious metals, inorganic chemicals and powders, specialty coatings, specialty engineered beryllium alloys, beryllium and beryllium composites, and engineered clad and plated metal systems.

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