

Materion Astronomical Filter Heritage

David Harrison

Materion Precision Optics, Westford MA, US

***Corresponding author**

David Harrison, Materion Precision Optics, Westford MA; Email: david.harrison@materion.com

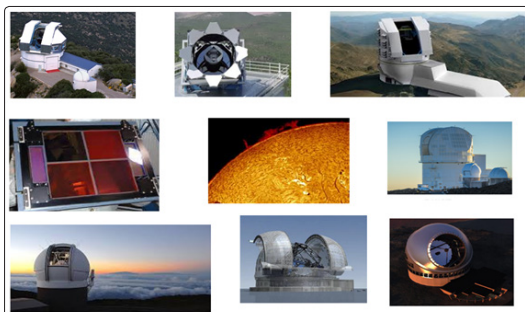
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For over 40 years Materion Precision Optics (formerly Barr Associates) has been providing precision optical coatings for some of the world's most challenging ground and space based astronomical programs. From UV – LWIR Materion offers a wide range of optical coatings (bandpass filters, dichroic beamsplitters, and mirrors). Our Large Area Optics Lab was designed and built to specifically provide high performance optics (>1.4M) to the large telescope community. Materion's heritage additionally includes our space-based optics capabilities; all of which meet or exceed even the most stringent performance and durability requirements.



As one of the world's largest manufacturers of precision thin film coatings Materion provides a broad range of coating solutions to the astronomical community. These items include narrow band filters, edge filters, anti-reflective coatings, dichroic beamsplitters and mirrors. With wavelength capability from 180nm – 50um our heritage and expertise are unparalleled. Heritage programs include; ESPRESSO, MOONS, DESI, PAN-STARRS, WIYN, DECam, SKYMAPPER, ZTF, Subaru HSC and LSST. These are just a small sample of projects within the astronomical community Materion has partnered with.

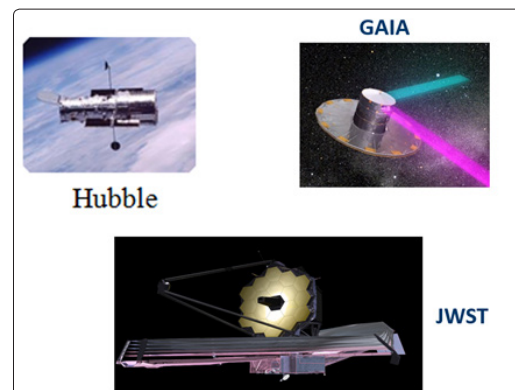


Most recently Materion has expanded our capability to include optics up to 1.4M in diameter. Our dedicated LAO lab was built with

the expressed purpose of providing the large optical components that the new larger telescopes require. With the demonstrated capabilities below Materion is well positioned to provide high-end cost-effective solutions to even the most demanding astronomical filter requirements.

- Large Filters:**
 - Coating uniformity:
 - < .5 % over 700 mm (3-4nm)
 - < 0.25 % over 600 mm (~2nm)
 - Physical substrate size: > 750 mm
- DBS and High Performance AR coatings:**
 - Coating uniformity: < 1.5% over 950 mm (< 15 nm at one micron)
 - Physical substrate size: 1,000 mm
- Enhanced Mirrors**
 - Coating uniformity: < 4% over 1250 mm (< 60 nm, NIR)
 - Physical substrate size: 1,400 mm

In addition to our astronomical filter heritage Materion has also provided spaced based optics for 100's of international space programs. These include Voyager, Cassini, Hubble, VIIRS, Landsat, JWST, Sentinel 2, ProbaV, SLSTR, GAIA and literally 100's of additional programs much too numerous to mention, including nearly every US mission to Mars. All utilizing Materion's heritage and expertise in providing durable, high performance, space qualified optical components.



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