Guest Editorial

Critical Technology: Infrared Optics

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This special issue on Infrared Optics is the first of what we expect will be an annual issue and an *Optical Engineering* tradition. Included in this issue are papers on the design and testing of infrared optical systems and components, including lenses, mirrors, coatings, and filters.

Infrared optics have long since progressed beyond the days when only mirrors were used because of the need to focus radiation within large wavelength intervals onto the detectors (although for many systems mirrors still represent the only feasible solution). The papers that appear in this issue present some of the recent developments in this critical technology.

Of special interest because of their timeliness are the papers on the Infrared Astronomical Satellite (IRAS). Under ordinary circumstances, I might have hesitated to include Soifer's paper, "Preliminary scientific results from the first six months of the Infrared Astronomical Satellite (IRAS)," because the results are, in fact, "preliminary," and the program had a few months of observation and data acquisition yet to go when the paper was prepared; however, this is the first publication of IRAS data, and there are so many "firsts" among the data that the paper merits publication in an archival journal.

All of the papers deserve special mention. The papers by Baker and Jamieson present innovations in infrared optics: Baker details several inventive infrared optical designs, while Jamieson examines refractors covering two or three waveband intervals.

The papers by Roberts, Low, Todd, and Kuttner contain advances that extend the state of the art in infrared systems design. The papers by Pompea and Bubenzer disclose the latest findings in black coatings. Paquin reveals a lightweight mirror, Campbell presents the latest in testing for LWIR systems, and Jain's paper on a tunable IR filter completes the special issue.

I wish to thank Scott Armstrong and Nelson Wallace for their assistance in reviewing papers for this special issue of *Optical Engineering*.