

Abstracts

Optimal Design of Optics for Submillimeter Astronomy (Letters)

J.E. Beckman and J.A. Shaw. "Optimal Design of Optics for Submillimeter Astronomy (Letters)." 1974 Transactions on Microwave Theory and Techniques 22.12 (Dec. 1974, Part I [T-MTT] (Special Issue on the Proceedings of the First International Conference on Submillimeter Waves and Their Applications)): 1113-1115.

We have designed two- and three-element shaped reflecting telescopes which minimize diffraction losses and sidelobes for submillimeter radiometric and spectrometric application. New solutions for the near-field output of an off-axis paraboloid when illuminated with a beam of considerable power taper (20 dB) show the merit of using Gaussian illumination for which the feed telescope may be explicitly designed. Conventional long-focus Cassegrain telescopes can, by using a suitably positioned off-axis conic to give a condensed focal patch, be converted for submillimeter sky chopping.

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