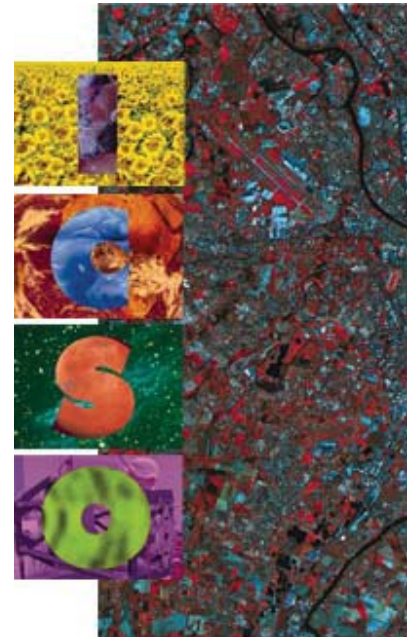


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Three mirror anastigmat optical designs for ISRO's optical payloads

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The three mirror anastigmat (TMA) optical design consists of a primary mirror, a secondary mirror and a tertiary mirror.

The primary and tertiary mirrors are off axis mirrors. ISRO pioneered the use of this type of optical design for space use, being the first in the world to utilize the TMA for the panchromatic camera flown on board the IRS 1C and 1D satellites. ISRO has gained considerable experience with this type of optical design and will continue to use this design for several of the forthcoming optical payloads. After the successful launch and operationalization of the panchromatic camera payload, the TMA has evoked considerable interest among the leading international space agencies. The main advantages of this type of optical design over the conventional two mirror systems are:

- 1. There is no obscuration of the incoming beam resulting in superior energy collection.
- 2. The image quality is vastly superior, especially at large fields of view
- 3. The field of view of these type of optical systems is much larger
- 4. The reduced sensitivity of alignment of the mirrors.

This paper presents the optical designs of three ISRO satellite payloads which utilize the three mirror anastigmat.