

Future Application of Semiconductor Detectors in Space Science

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Semiconductor detectors play a very important role in space science ranging from ground observatories and space missions. X-ray CCD, which have opened up a new era in X-ray astronomy, is an obvious example of such detectors. More advances to match for the requirement of next generation scientific missions are expected to attain higher energy resolution, wider energy coverage, and higher angular resolution. Here I present some prospects for future application of semiconductor detectors. Emphasis will be placed on detectors to be adopted in future X-ray and gamma-ray astronomy missions. New hard X-ray and soft gamma-ray detectors based on the concept of a semiconductor Compton telescope will be described a bit in detail, since these energy regions are regarded as a “sensitivity gap” and therefore require much more advanced detectors.