

Temperature and Emission Measure Properties of Coronal Structures across the Whole Sun Observed with Hinode/X-Ray Telescope

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The X-ray telescope (XRT) on board the *Hinode* satellite has a capability to observe almost the whole coronal plasma, which have a wide temperature range from less than 1 MK to more than 10 MK. Using the data set observed with this telescope and well calibrated XRT temperature response, the coronal temperature (T) and emission measure (EM) can be derived across the whole sun with filter ratio method. Although this filter-ratio T is a mean temperature of coronal multi-thermal plasma biased by used two filters, we find that various coronal structures, namely, active region, quiet region, coronal hole, etc., are classified with the scatter diagram of T and EM , i.e., each coronal structure have each typical T and EM . In the T-EM diagram, the coronal structures which have different magnetic field structures, namely, closed compact loop, closed long loop and open field, are distributed with different trends: The closed compact loop structures are almost aligned along the single line, while the other two types deviate from this line on both side. On the basis of these results, we also derive the typical heating flux \mathcal{H} for each coronal structure. Considering the energy flux of outflow in open magnetic field region, the \mathcal{H} in open field region is comparable to in neighboring closed loop region. This is the first study of energetics with a global temperature map.