

**FUNDAMENTAL PHYSICAL PROCESSES IN
CORONAE: WAVES, TURBULENCE, RECONNECTION,
AND PARTICLE ACCELERATION**

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Our understanding of fundamental processes in the solar corona has been greatly progressed based on the space observations of SMM, Yohkoh, Compton GRO, SoHO, TRACE, RHESSI, and STEREO. We observe now acoustic waves, MHD oscillations, turbulence-related line broadening, magnetic configurations related to reconnection processes, and radiation from high-energy particles on a routine basis. We review a number of key observations in EUV, soft X-rays, and hard X-rays that innovated our physical understanding of the solar corona, in terms of hydrodynamics, MHD, plasma heating, and particle acceleration processes.