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ASCA Observation of SS Cygni in an Outburst and a Quiescence

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SS Cygni is one of the brightest and well-studied dwarf novae (DNe) in hard X-ray, as well as in optical. Dwarf nova is a subclass of cataclysmic variables (CVs) in which a non-magnetic white dwarf accretes matter from a Roche-lobe-filling low-mass main sequence star through an accretion disk. The X-ray emission from DNe is thought to be produced in the narrow boundary layer (BL) where the plasma is viscously decelerated near the surface of the white dwarf. In outburst state (high- \dot{M}) the BL is expected to radiate as a blackbody ($kT \sim 20$ eV), while in quiescence (low- \dot{M}) it is expected to radiate as a thermally thin plasma ($kT \sim 5$ keV).

We compare two *ASCA* spectra of SS Cygni, obtained in an outburst and a quiescence. We find that the outburst spectrum is softer than the quiescent. There are indications for temperature stratification which is more pronounced in the outburst spectrum. A narrow 6.4 keV gaussian line, probably produced by reflection on the surface of the white dwarf and/or the inner disk, is detected in both the outburst and quiescent spectra. Both spectra suggest subsolar abundances. We find that the present quiescent flux, which was obtained ~ 8 days after the end of an outburst is much lower than a quiescent *Ginga* flux obtained *around the end* of an outburst.