

# PLASMA DIAGNOSTICS OF LARGE X-RAY FLARES ON ACTIVE STARS

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We analyze a sample of large stellar X-ray flares observed by *Chandra* in high resolution. We constrain the possible degenerate solutions for the abundances and thermal structure of the plasma as well as averaged densities, during the flare and quiescence. This allows us to determine the effects of the flares on the coronae and check whether they cause selective abundance variations (the so called FIP effect). We search for non-thermal electrons during the flare by comparing line emission to continuum. From preliminary results, most flares show insignificant abundance variations and a two phase behavior indicating a compact flaring region. The low temperature threshold of the flaring region is shown to be too high for conventional density measurements, therefore not ruling out high densities expected from chromospheric evaporation during the flare.