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Variability of Calcium Abundance during Flares as Determined from Analysis of SMM BCS Spectra

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Using revised Bent Crystal Spectrometer instrument characteristics, we determined absolute abundances of calcium $A(\text{Ca})$ for 207 flares in their decay phases. The accuracy of abundance determination was the best ever achieved for hot ($T > 5 \text{ MK}$) flaring plasma sources, amounting to only 1 - 3 percent for some flares. While the calcium abundance is constant during the decay phase for most cases, for several flares the abundance is observed to change with time. We present patterns of $A(\text{Ca})$ variability for these flares, some of them showing an abundance rise, others a decrease with time during the decay. We discuss the results and present possible physical scenarios which may account for the observed abundance changes.

Student poster?

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