NANOSIMS INVESTIGATION OF PRESOLAR MATERIAL IN CHONDRITES OF THE CR CLAN: C-, N-, AND O-ISOTOPIED STUDIES. J. Leitner, P. Hoppe, and J. Zipfel. 1Max Planck Institute for Chemistry, 55128 Mainz, Germany. E-mail: leitner@mpch-mainz.mpg.de. 2Forschungsinstitut und Naturmuseum Senckenberg, 60325 Frankfurt, Germany.

Introduction: Silicates and oxides are among the most abundant types of presolar dust grains observed in primitive solar system matter [e.g.,1,2]. The CR chondrite clan, consisting of the CR, CH, and CB chondrite groups, contains some of the most primitive meteorites, with characteristic bulk $^15$N-enrichments [5,6]. High abundances of presolar silicates and carbonaceous grains were recently reported in individual CR chondrites [5–7]. Noble gas data imply the presence of carbonaceous presolar grains also in CH chondrites [8]. No presolar grains have been found in the CH/CB chondrite Isheyevo yet, but this meteorite contains chondritic clasts displaying very high $^15$N-enrichments [9,10]. Investigating the content of presolar matter in meteorites of these groups can shed light on the distribution of presolar grains and molecular cloud material in the solar nebula.

Samples and Experimental: With the NanoSIMS 50 ion probe in Mainz, we performed ion imaging of 5×5 µm² to 10×10 µm²-sized matrix areas in a thin section of the CR2 chondrite NWA 852 to search for C- and O-bearing presolar grains and to characterize the N-isotopic composition. $^{16}$O–, $^{17}$O–, $^{18}$O–, $^{28}$Si–, and $^{27}$Al$^{16}$O– were measured in multi-collection to identify presolar silicate and oxide grains. Additionally, $^{12}$C–, $^{13}$C–, $^{12}$C$^{14}$N–, $^{12}$C$^{15}$N–, and $^{28}$Si– were measured on a sub-set of matrix material studied for O in NWA 852 to search for C- and N-isotopic anomalous phases. It is planned to extend our ion imaging studies to a polished section of the CH/CB chondrite Isheyevo.

Results and Discussion: 23 presolar silicate and 8 oxide grains were identified in NWA 852, representing abundances of 98 ppm for silicates and 70 ppm for oxides, respectively. C and N isotopes have been analyzed in ~600 µm² of matrix. The average $\delta^{15}$N is +(178±48)%o, and up to +(1122±148)%o in hotspots. One SiC grain has been identified, with $^{12}$C/$^{13}$C = 70±2.

NWA 852 may be linking presolar-silicate-rich, nearly unaltered CR chondrites and CRs with lower presolar grain abundances. This can be due to varying degrees of parent body alteration, or initial heterogeneities in the solar nebula. An O-isotopic study of the Isheyevo meteorite is in preparation, and first results will be presented at the conference.