plagioclase), nakhlites (clinopyroxene-rich) and Chassigny (olivine-rich) makes it more difficult to judge, whether all these groups have a related origin. One possibility to perform this, is to compare the ratios of incompatible elements, which are known to stay relatively constant during partial melting or fractional crystallization processes. Using mainly data of Burghele *et al.* (1983) and Dreibus *et al.* (1982) we studied the ratios of all incompatible elements relative to REE.

The incomplete elements can be divided into two groups. The first one includes all highly incompatible elements (K, Rb, Cs, Ba, La, and Ce). These elements are correlated with each other in all SNC-meteorites. The second group is composed of Ca, Al, Ti, P, Sc, Na. They have constant ratios in shergottites and Chassigny with heavy REE. Only Nakhla deviates in some cases more than 50% from the mean ratios in both element groups. These differences are strongest for the elements Ca and Sc, which have high partition-coefficients between clinopyroxene and basaltic melts. Therefore it is not unreasonable to find them enriched in Nakhla, which consists to 80% out of augite. The P/HREE-ratios of Nakhla, which are between two and three times lower than those of the other SNC-meteorites, can be explained in a similar way. Measurements of clinopyroxene from terrestrial peridotites show also depletions of the P/REE-ratios relative to the other mineral phases (Weckwerth, 1983). Treiman *et al.* (1984) took the high variation of P/La-ratios as an indicator for a distinct origin of SNC-meterorites. In contrast to this, we think that the correlation of P with more heavy REEs indicates a more compatible behavior of P, possibly caused by residual phosphate or a higher olivine/plagioclase-ratio in the source-region of SPB.

W and Ta have constant ratios with the other highly incompatible elements in shergottites, but in Nakhla and Chassigny the W/La and the Ta/La ratios are about a factor of three lower (Treiman *et al.* (1984). In light of the correlations of all SNC-meteorites for the other highly incompatible elements and the common age, we do not believe that the postulation of an inhomogeneous SPB-mantle or different parent bodies is justified.

Burghele, A. *et al.*, 1983. *Lunar Planet. Sci. XIV*, 80.
Dreibus, G. *et al.*, 1982. *Lunar Planet. Sci. XIII*, 186.
Treiman, A. *et al.*, 1984. *Lunar Planet. Sci. XV*, 864.
Weckwerth, G., 1983. Thesis, University of Mainz.

A NEW CLASS OF ENSTATITE CHONDRITE?

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Several enstatite chondrites (Qingzhen, Parsa, Kota Kota, Allan Hills A77156, Yamato 69001, Galim and Yamato 74370) have a variety of petrographic and mineralogic properties which set them apart from the other enstatite chondrites (ElGoresy *et al.*, 1983; Prinz *et al.*, 1984; McKinley *et al.*, 1982; Nagahara, 1984). Most of these properties can be considered an extrapolation of the type 6 to type 4 trends, suggesting that these meteorites have suffered less metamorphic alteration, and equilibrated at lower temperatures, than the others. A few properties are not consistent with this trend, such as the Si content of the metal which is intermediate between EH and EL chondrites. On an Mg/Si vs. Fe/Si plot these meteorites fall with the EH chondrites, and well resolved from the EL chondrites. It has been suggested that this group of enstatite chondrites represent a new class of meteorites, perhaps sampling a new parent body (ElGoresy *et al.*, 1983; Prinz *et al.*, 1984).

We have performed an INAA on two of these chondrites, Qingzhen (3 Ir-radiations) and Allan Hills A77156 (A77295, 2 irradiations) and present the results in Figure 1, with literature data for Parsa (Sears *et al.*, 1982) and Yamato 69001 (Shima and Shima, 1975). Ni, Co, Fe, Au and As (to a lesser extent Ir) are probably the elements which best resolve the EH and EL classes and Qingzhen, Parsa, Yamato 69001 and Allan Hills A77295 plot clearly among EH chondrites and well away from the EL chondrites. Al, Sc, Ca, REE and V do not readily resolve the EH and EL classes, although they do distinguish the enstatite chondrites from the other chondrites. Sb, Se and Zn are highly scattered, but are essentially consistent with a low petrologic type. Mn, Na and K are the only elements with abundances intermediate between the EH and EL chondrites (our 77295 K value excepted).