CARBONACEOUS CHONDRITE CLASTS IN THE HALITE-BEARING H5 CHONDRITE ZAG. M. E. Zolensky[1], R. N. Clayton[2], T. Mayeda[2], J. Chokai[3], O. R. Norton[4]; [1]NASA Johnson Space Center, Houston, TX 77058 USA; [2]Enrico Fermi Institute, University of Chicago, Chicago, IL 60637 USA; [3]University of Tokyo, Tokyo 113-0033, Japan; [4]23028 Chisolm Trail, Bend, OR 97702 USA

Introduction: Zag is one of only two meteorites (both H5) that are known to contain water-bearing halite crystals. This water is the only sample we have of asteroidal fluid and is thus of critical importance for examinations of the evolution of water in the solar system, and the delivery of volatiles to evolving small bodies as well as the earth itself [1&2]. Given that these two halite-bearing meteorites are both metamorphosed, it is probable that the halite was contributed by some foreign material. Here we report foreign clasts within Zag, one of which may be the source of the halite and water.

Zag Clasts -Mineralogy and Petrography ORN discovered the clasts on a sawn surface; the two clasts appeared as one measuring 4 mm across. No others have been located. We performed microprobe analyses on grains from both types of clasts.

Clast A consists predominantly fine-grained matrix, consisting of a mixture of serpentine, saponite, magnetite and pyrrhotite. Set within the matrix are small aggregates of magnetite, pyrrhotite, phyllosilicate and, notably, Ca-Mn-Mg-Na carbonates. The carbonates have very interesting zoning: Mn-rich cores, mantled with Ca-carbonate, and very thin Na-Mg-rich rims.

Clast B appears to be an impact melt consisting of thin and skeletal laths of plagioclase floating in a mesostasis with a pyroxene composition. A few fine-grained aggregates float within this clast, and may be residual unmelted material.

Oxygen Isotopic Composition Samples of each of the clasts yielded these compositions:

	delta-18	delta-17	DELTA-17
A	+23.68	+13.71	+1.41
B	+5.90	+2.74	-0.33

Clast A plots among the CI chondrites, though with a record high DELTA-17 value. Clast B plots closest to CR chondrites.

Conclusions: The oxygen compositions preclude a relation between Clast A and B. Clast A appears to be CI1, though with some unusual carbonate aggregates worthy of future examination. There appear to be Na-enrichments associated with these carbonates, which suggests a link between this clast and the halite in Zag.

References: [1] Zolensky M. E. et al. (2000) *LPS XXXI*; [2] Rubin A. E., Zolensky M. E. and Bodnar R. J. (2002) *Meteorit. Planet. Sci.* **37**, 125-142.

Fig.1 BSE image of Zag clast A; view measures 2 mm across. Largest aggregate (grey) is carbonate.