

on-HL in diamonds from the Allende meteorite - composite nature  
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ce Xe-HL was first noted to consist of both Heavy and Light isotopes (1,2) been commonly accepted that this must represent a mixture of two genetically different components. Extensive analysis of available data led and Phinney (3) to conclude that the Xe-H and Xe-L are indeed separate ents. However, direct measurements on Xe-HL rich fractions have only ically shown marginal variations in the relative amounts of Xe-H and Xe-L Lewis et al. (5) found that C $\delta$ , the carbon carrier of Xe-HL, in Allende and son is in large part very small, 26Å, diamonds, but that another part of C $\delta$  e nearly amorphous. We have tried to fractionate C $\delta$ , hoping to partially te the diamond crystals from the amorphous fraction. used the tendency of C $\delta$  to form a stable colloid at a pH>5 and to erate into large flocs at pH<3 to separate the C $\delta$  from other fine ulates. This reversible process is presumably due to the ionization of acid (0.4 meq/g) on the surface of the carbon particles. We also separated C $\delta$  ractions according to if we could centrifuge it down only with a pH<3, 7, or >3.7, generating samples DN, DM & DK respectively (46,169, & 3 ppm by : of the bulk meteorite.) We have not finished characterizing these ites, but have measured Ne & Xe (Table 1) on our high sensitivity mass- ometr CAS-1, using stepped pyrolysis and standard procedures (6). Listed atures are nominal furnace temperatures,  $\approx 200^\circ\text{C}$  the actual sample ature. Errors for the isotopic ratios take no account of the uncertainty in ospheric standard ratios. Procedural blanks are negligible. ese new measurements indicate that each sample has two distinct components, ed below and above "1600°C." Compared to the low temperature release, the emperature release has a higher 21/20 and lower 136/132 ratios. The smaller emperature fraction is more abundant in the least readily suspended fraction le DK - perhaps the one with the lowest surface/volume ratio, i.e. the st. While not separating Xe-H from Xe-L, three isotope plots for these s (e.g. figs. 1a & 1b) imply an admixture of an entirely new component, ughishable from mass fractionation or the addition of e.g. atmospheric, AVCC, ar Xe. The mixing line is within 2 $\sigma$  of making 134 & 136 /132 simultaneously If this is not happenstance, it implies an end member composition of: 36 = .013(1), .026(3), .52(1), 6.6(3), =1.00, 4.5(3), 5.5(1), 0.2(1), =0.00; known components, & specifically not s-process Xe (7). Alternatively, one consider a new component enriched in e.g. 124 & 136 but distinct from Xe-HL. new component has Xe-130=0, then it also is unlike any known previously: 26 = .090(2), .023(7), .015(3), .06(7), =0.00, .216(8), .23(2), .87(2), =1. would guess that neither simple model is correct, even leaving aside the onal variations seen in the 2000°C Allende DM step, in the Xe-128,129 e 127, 129?), & possibly in the 124 vs 126 data. What all this means & how s into or modifies our understanding of Xe in primitive meteorites will e further work. Of course, as Xe-HL survives carried in pre-solar star- at some level we certainly expect to see variations, corresponding to dust ing from different stars or different stages of stellar evolution.

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Table 1. Neon and Xenon in 3 Cδ (diamond) fractions from Allende

Temp. °C	[Ne-20] E-8 cc/g	21	22	[Xe-132] E-8 cc/g	124	126	128	129	130	131	134	136
		20	20		132	132	132	132	132	132	132	132
<b>Allende DK (0.0826 mg) Least readily suspended</b>												
800	307	.00407	.1144	.65	.0082	.0052	.0971	1.082	.1551	.829	.594	.634
		12	29		3	3	12	4	10	5	2	2
1600	7430	.00436	.1195	12.9	.00813	.00567	.0912	1.067	.1549	.840	.6193	.6781
		6	16		6	7	2	1	4	1	8	5
2000	2420	.00478	.1219	12.2	.00776	.00552	.0916	1.073	.1569	.840	.5782	.6310
		4	8		7	2	2	1	4	1	5	7
2200	39	.00403	.101	.35	.0066	.0053	.0914	1.058	.1576	.839	.585	.628
		30	28		4	2	27	5	16	5	4	3
2300				.13	.0071	.0058	.090	1.074	.161	.835	.577	.615
					7	7	4	13	5	13	5	13
Total	10196	.00445	.1188	26.23	.00793	.00558	.0915	1.070	.1559	.840	.5989	.6541
		5	12		7	3	2	1	4	1	6	6
<b>Allende DM (0.5959 mg) Middle fraction</b>												
800	490	.00406	.1172	.94	.00771	.00540	.0972	1.110	.1549	.838	.6024	.6432
		3	8		12	7	4	1	3	1	8	10
1000	660	.00400	.1175	.72	.00777	.00557	.0926	1.190	.1554	.843	.6019	.6478
		5	6		9	8	4	2	5	2	10	8
1200	990	.00419	.1185	.96	.00803	.00546	.0924	1.065	.1548	.839	.6150	.6676
		6	18		7	11	3	1	5	1	9	10
1400	2310	.00423	.1164	2.80	.00821	.00556	.0909	1.049	.1548	.841	.6262	.6854
		7	50		5	6	3	1	3	1	5	7
1600	4130	.00451	.1191	12.00	.00815	.00566	.0909	1.062	.1555	.843	.6140	.6744
		5	33		3	3	2	1	3	1	4	5
1800	1070	.00498	.1243	6.30	.00763	.00555	.0913	1.074	.1576	.839	.5646	.6142
		8	31		4	4	2	1	3	1	4	5
2000	60	.00534	.121	.94	.00718	.00533	.0905	1.073	.1590	.838	.5530	.5968
		9	14		8	5	4	1	2	1	10	8
Total	9710	.00441	.1188	24.66	.00795	.00559	.0913	1.070	.1560	.841	.5997	.6551
		5	17		4	4	2	1	3	1	4	5
<b>Allende DN (0.4710 mg) Most readily suspended</b>												
800	260	.00422	.1176	.57	.00787	.00543	.0984	1.075	.1560	.839	.6027	.6457
		3	10		14	9	6	2	5	2	16	19
1600	8200	.00438	.1204	15.3	.00815	.00563	.0911	1.068	.1551	.842	.6176	.6764
		6	12		3	3	2	1	3	1	4	4
2000	1200	.00491	.1225	4.9	.00756	.00551	.0913	1.075	.1578	.839	.5625	.6118
		4	14		4	4	1	1	2	1	6	6
2200	23	.00427	.1158	.15	.0072	.0051	.0902	1.062	.1577	.840	.5858	.6359
		11	56		2	1	15	3	4	3	20	20
Total	9683	.00444	.1206	20.92	.00800	.00559	.0913	1.070	.1558	.841	.6041	.6601
		5	12		3	3	2	1	3	1	4	4

Figures 1a, b. Selected data samples DK, DM, DN. Temperatures in 100°C, regression through solid points only.

