Table II. Effective cross section for production of Xe^{124}, Xe^{126}, and Xe^{128} from spallation of barium by cosmic rays. A cosmic-ray flux of 5 particles per cm^2 per second was assumed in the meteorite.

Meteorite	Effective production cross section (in units of 10^{-24} cm^2) Xe^{124}	Xe^{126}	Xe^{128}
Stannern	0.071	0.124	0.130
Pasamonte	0.058	0.085	0.085
Juvinas	0.097	0.154	0.206
Petersburg	0.102	0.159	0.179
Moore County	0.059	0.103	0.103
Pena Blanca Spring	0.055	0.118	0.051
Average	0.07 ± 0.02	0.12 ± 0.03	0.13 ± 0.06

This one value, 3 ppm[11] for Johnstown, confirms our expectation of a low barium content. We have rather arbitrarily selected a Ba value of 2 ppm to be used for Pena Blanca Spring.

Table II shows the results of these calculations of the "effective production cross sections." Considering the fact that we have chosen meteorites with a wide range of cosmic-ray exposure [$(2.2 \text{ to } 46) \times 10^6$ yr], a wide range of barium concentrations (2 to 48 ppm), and a varying amount of "primordial" xenon [$(0.25 \text{ to } 1.7) \times 10^{-11}$ cc STP/g], the relatively small variation from the average value of the effective cross sections (0.07 ± 0.02, 0.12 ± 0.03, and 0.13 ± 0.06 barns for Xe^{124}, Xe^{126}, and Xe^{128}, respectively) thus obtained seems to us to be rather firm evidence for the mechanism of cosmic-ray spallation reactions on barium in meteorites during the past few (2 to 50) million years.

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BREAKDOWN MINIMA DUE TO ELECTRON-IMPACT IONIZATION IN SUPER-HIGH-PRESSURE GASES IRRADIATED BY A FOCUSED GIANT-PULSE LASER*

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Minima in the curves of threshold electric field versus pressure for ionization of super-high-pressure helium, argon, and nitrogen using a focused giant-pulse ruby laser are reported here. These minima are characteristic of electron impact ionization. Gold and Bebb[1] and others have analyzed ionization produced by focused lasers in terms of multiphoton absorption alone. Tomlinson[2] has shown that while multiphoton absorption may be the trigger mechanism, it cannot explain the subsequent growth of the ionization. Meyerand and Haught[3] have suggested that the mechanism is inverse bremsstrahlung. Askaryan and Rabinovich[4] have commented on the prospective role of electron impact ionization. This Letter presents definitive experimental data which are indicative of electron impact ionization where the heating of electrons occurs through energy transfer from the light wave to the electrons undergoing collisions with neutrals.