

**PREATMOSPHERIC DIMENSIONS OF EAGLE STATION PALLASITE**

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The Eagle Station pallasite (recovered mass : 36.5 kg) was found in 1880 and described by Kunz (1887). The meteorite was almost square, measuring 19 cm in thickness, 22 cm in width and 29 cm in length. It has subsequently been sawed and various slices distributed to different collections. Today the main mass (18 kg) is conserved in the Vienna Museum.

Track densities of Fe group nuclei were measured in olivine crystals coming from 67 locations sampled in four slices of Paris, Vienna and Chicago museums. They vary from  $1.6$  to  $17 \times 10^6 \text{ cm}^{-2}$ . From the cosmic-ray track densities, external shapes and one characteristic zone on the border where the tracks are partially annealed, it was possible to replace the different slices in their original position within the recovered meteorite : the reconstructed fraction corresponds to about 22 kg.

By using an exposure age of  $32 \pm 6$  m.y., from the data of Megrue (1968) and according to the production rates of Bogard and Cressy (1973) corrected for shielding effects (Cressy and Bogard, 1976) ( $T_{21} = 26$  m.y.;  $T_3$  and  $T_{38} = 38$  m.y.), and the track production rates of Bhattacharya *et al.* (1973), it was possible to estimate fairly accurately the preatmospheric shape of the Paris slice (sp. gr.  $4.25 \text{ g.cm}^{-3}$ ) for which the mean thickness ablated is  $\approx 3.15_{-0.60}^{+0.35}$  cm. This averaged ablation extrapolated to the parallelepipedic volume of the meteorite allows an accurate assessment of its preatmospheric mass :  $83.3_{-7.8}^{+6.7}$  kg. This corresponds to an ablation loss (%) of  $56.2_{-6.5}^{+3.3}$ . The low amount of ablation suggests a rather low geocentric velocity, probably close to that of the Lost City chondrite (8.8 km/sec).

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Meteorites 12, 1977, 334