OBSERVATION OF STARS PRODUCED DURING COLD FUSION

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COLD FUSION

TECHNICAL NOTE

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It has been indicated that multiple-neutron nuclei such as quad-neutrons can be emitted during cold fusion. These multiple-neutrons might bombard the nuclei of materials outside a cold fusion cell to cause nuclear reactions. Observations of nuclear emulsions that were irradiated during a cold fusion experiment with heavy water and palladium foil are described. Various traces, like stars, showing nuclear reactions caused by the multiple-neutrons have been clearly observed.

INTRODUCTION

Multiple-neutron nuclei such as quad-neutrons can be produced during cold fusion.[1] The quad-neutron results from the emission of the new iton particle during the hydrogen-catalyzed fusion reaction, in which the hydrogen cluster is extremely compressed to depolarize the hydrogen nuclei.[2] More multiple-neutron nuclei, with six or eight neutrons, can be produced during many-body fusion reactions of hydrogen.[3] Furthermore, nuclei consisting of >100 neutrons can be produced from a host metal of palladium by capturing hydrogen atoms and/or electrons.[3]

These multiple-neutron nuclei seem stable for a fairly long time, while neutron coupling is impossible for the ordinary neutrons that are produced in a fission reactor. This is so because the internal structure of the multiple-neutrons might already be broken by the emission of the itons. Among the multiple-neutrons, light ones such as the quad-neutrons collapse by self-gravity to make micro-explosions, whose traces have been observed on nuclear emulsions.[1,4] On the other hand, nuclei with a great number of neutrons undergo similar gravity-decay to produce tiny black holes, whose evaporations have also been observed,[5] although the critical multiplicity that determines the branching is not clear at this time.

When multiple-neutrons are born in the palladium metal, they are covered with the itonic mesh.[4] Although the itonic mesh slowly fades in the materials of the electrolyte solution and nuclear emulsions, it might be so sticky that it can easily cause the multiple-neutrons to interact with the nuclei of the media. Nuclear reactions might be seen outside the electrolyzing cell during cold fusion.

This technical note describes observations of nuclear emulsions that were irradiated during a cold fusion experiment with heavy water and palladium foil.[4] Stars that were caused by the nuclear interactions between the multiple-neutrons and the nuclei of the nuclear emulsions were successfully observed.

SEARCHING FOR TRACES OF NUCLEAR REACTIONS

A thin foil of palladium was used in the previous experiment,[4] whose method is direct and effective for observing emitted particles. The observations of itonic quad-neutrons and tiny black holes were reported elsewhere.[4,5]

The same nuclear emulsions were again searched for nuclear reactions. The nuclear emulsions (100 μm × 25 mm × 25 mm) were located outside an electrolyzing cell and placed in contact with the thin palladium foil (0.10 mm thick). Hydrogen atoms were charged into the palladium metal by electrolyzing heavy water (mixed with 3% NaCl). The temperature showed an insignificant increase, but it was proven by the successful observations of itonic quad-neutrons and tiny black holes that cold fusion certainly occurred.[3,5]

RESULTS AND DISCUSSIONS

Four traces were successfully observed on the nuclear emulsions, suggesting nuclear reactions by the multiple-neutrons. They all are starlike (referred to as "cold fusion stars"), similar to traces that are produced by cosmic rays. The number of emitted particle products is larger for the cold fusion stars than for the cosmic stars, shown in Fig. 2 of Ref. 6. It is easy to distinguish them.

Figure 1a shows a cold fusion star. The trace was recorded on film number 7. The coordinates (x,y,z) of the trace are shown in Fig. 1b. The number of recorded particle products is very large, 14. There seem to be various kinds of

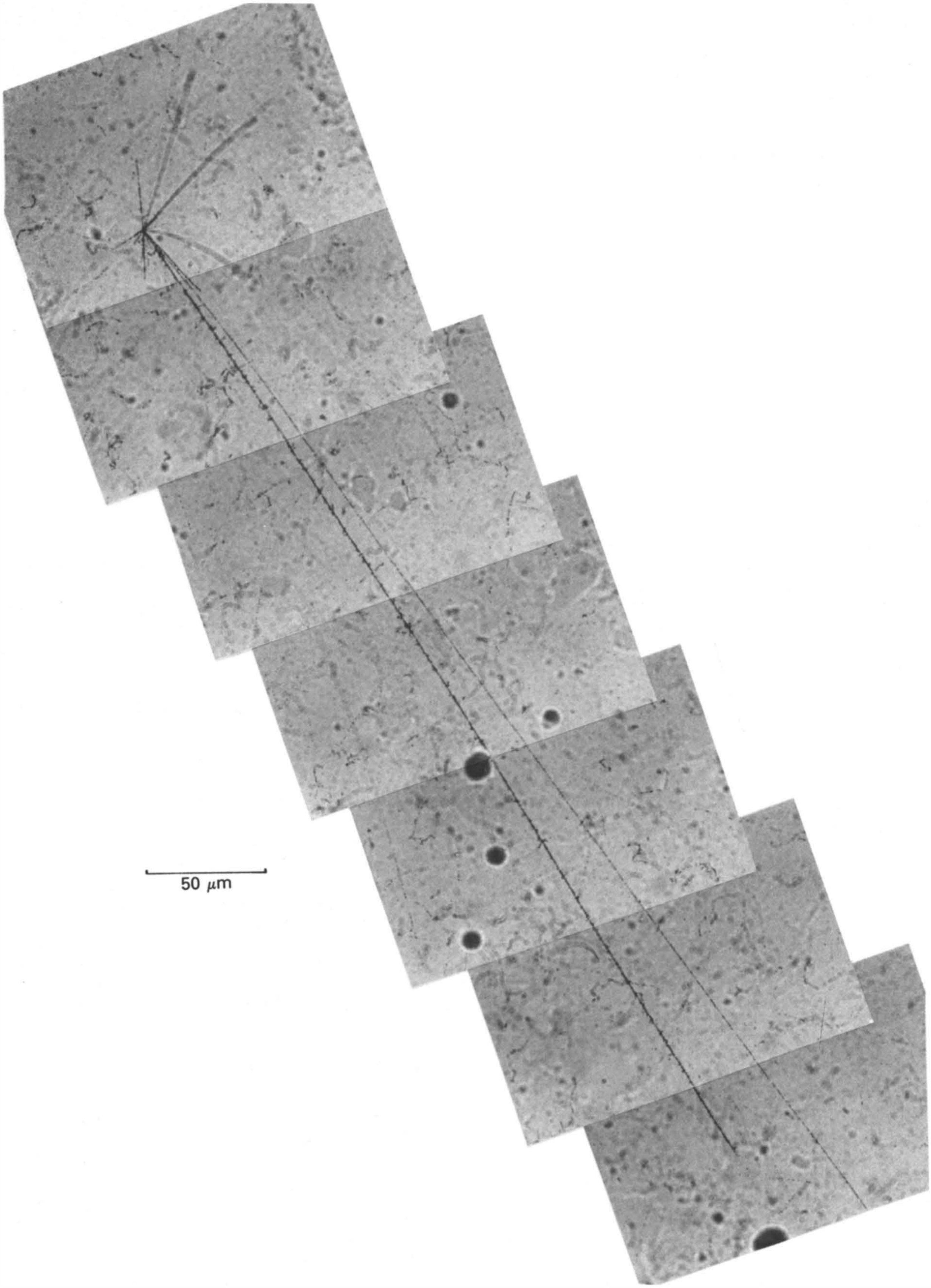

Fig. 1a. Cold fusion star.

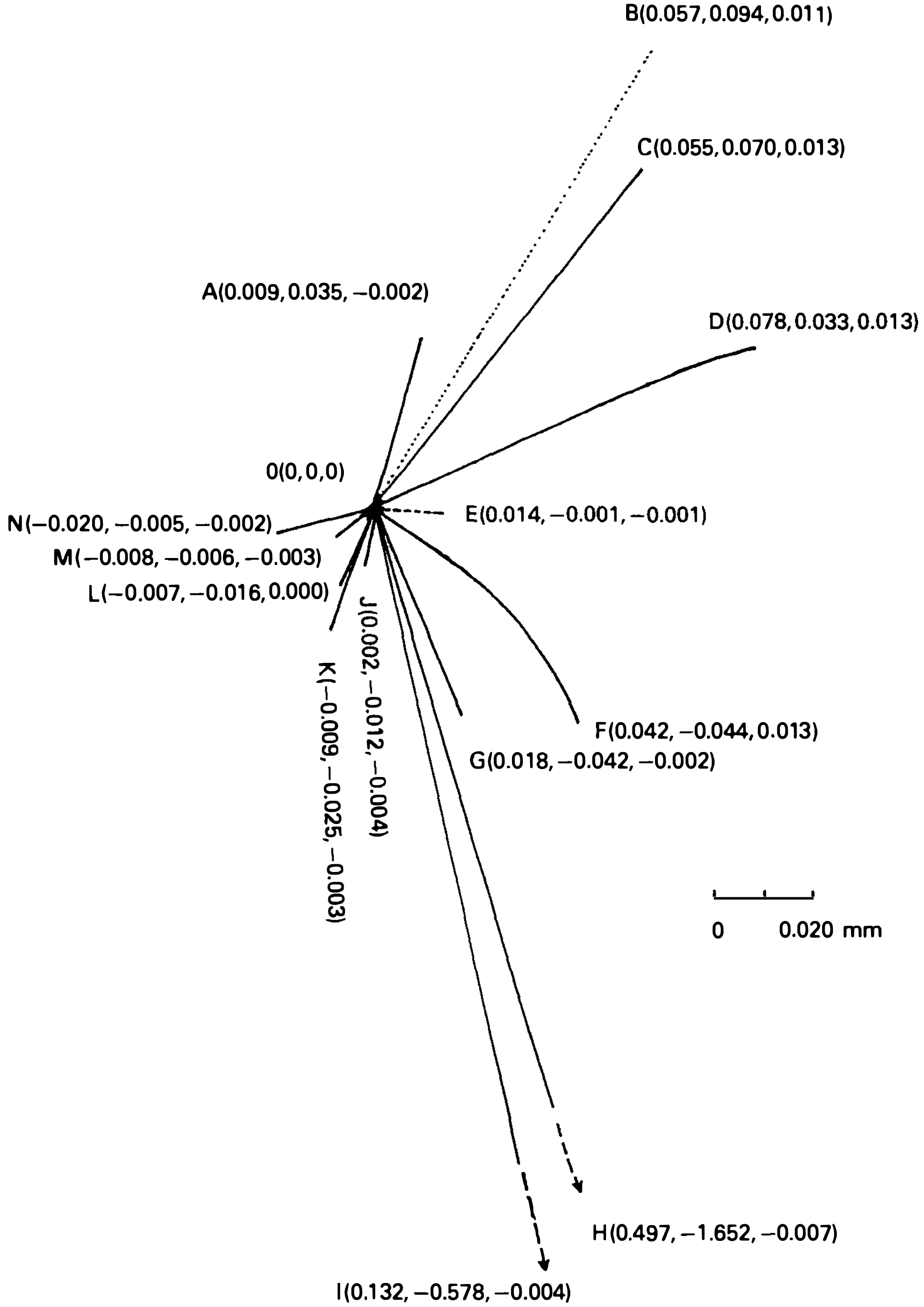

Fig. 1b. Coordinates of traces.

particle products with various masses and charges. The particles generally have a high ionization power, but particles B and E have a lower one. Trace B especially resembles that of an electron or positron. Moreover, the cold fusion stars typically have some extremely long traces, for example, 1.725 and 0.593 mm shown by traces H and I in Fig. 1b, respectively. This means that the nuclear reaction producing the cold fusion star has a high *Q* value. On the other hand, particle F has a large curvature, so it might be an incident particle such as an itonic quad-neutron, because the itonic cover is highly charged.[4]

Figure 2a shows another cold fusion star, which is partly omitted. Figure 2b shows the coordinates of the traces. The number of the recorded particles is 12. Particle A might be an electron or positron, although it can be hardly seen here because of the focusing condition. Particle F might be an incident one. Figure 3 shows a cold fusion star whose traces are generally short. It is suggested that the *Q* value might be small. Figure 4 shows the fourth cold fusion star. This also has shorter traces.

The stars were obviously caused by some particles that were produced during cold fusion. It is inferred that multiple-neutrons such as quad-neutrons might have collided with the nuclei of the nuclear emulsions to produce the stars.

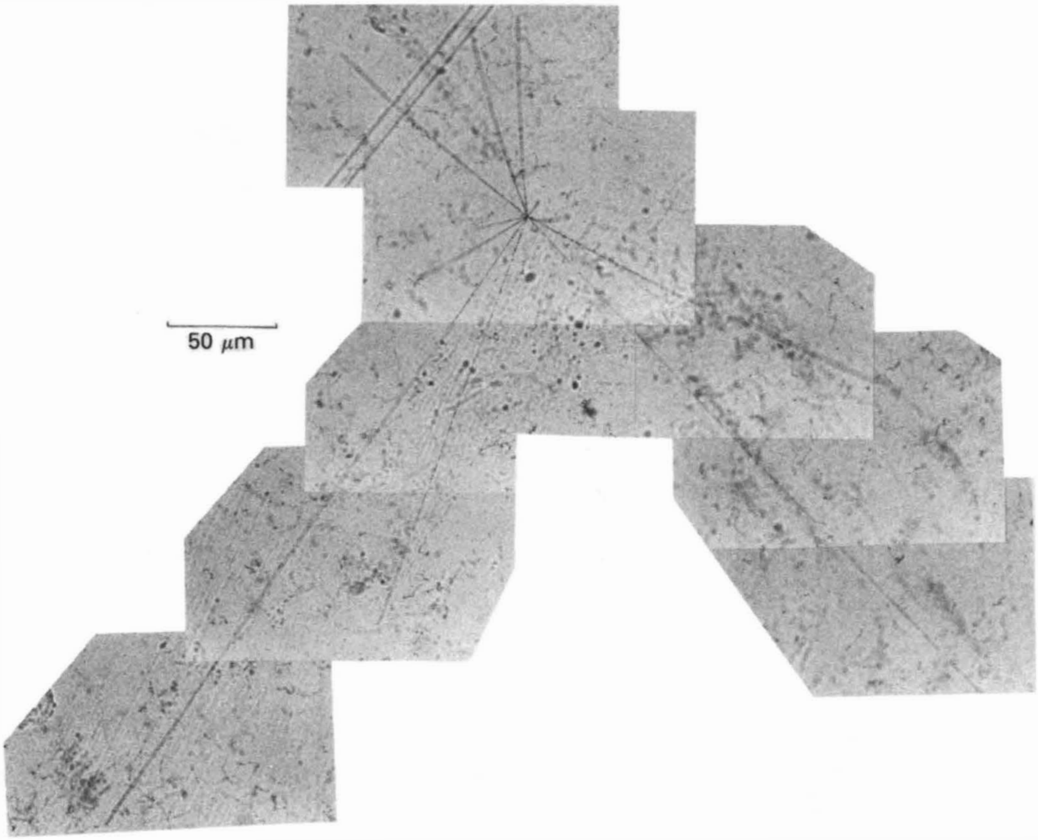

Fig. 2a. Cold fusion star.

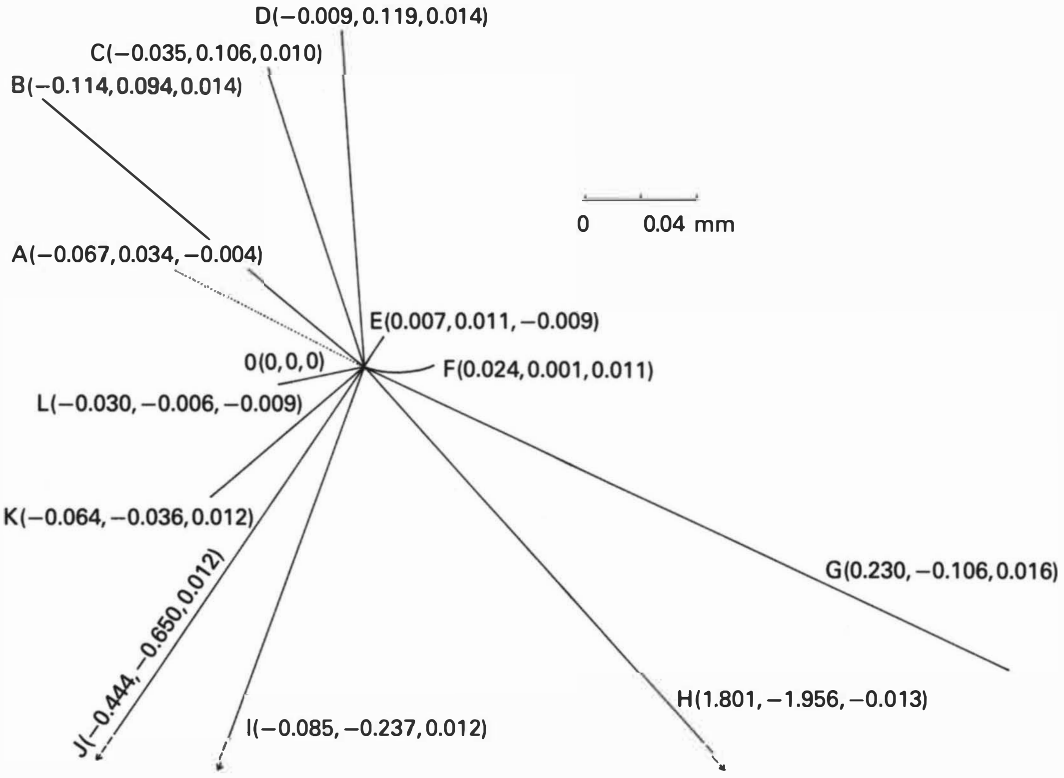

Fig. 2b. Coordinates of traces.

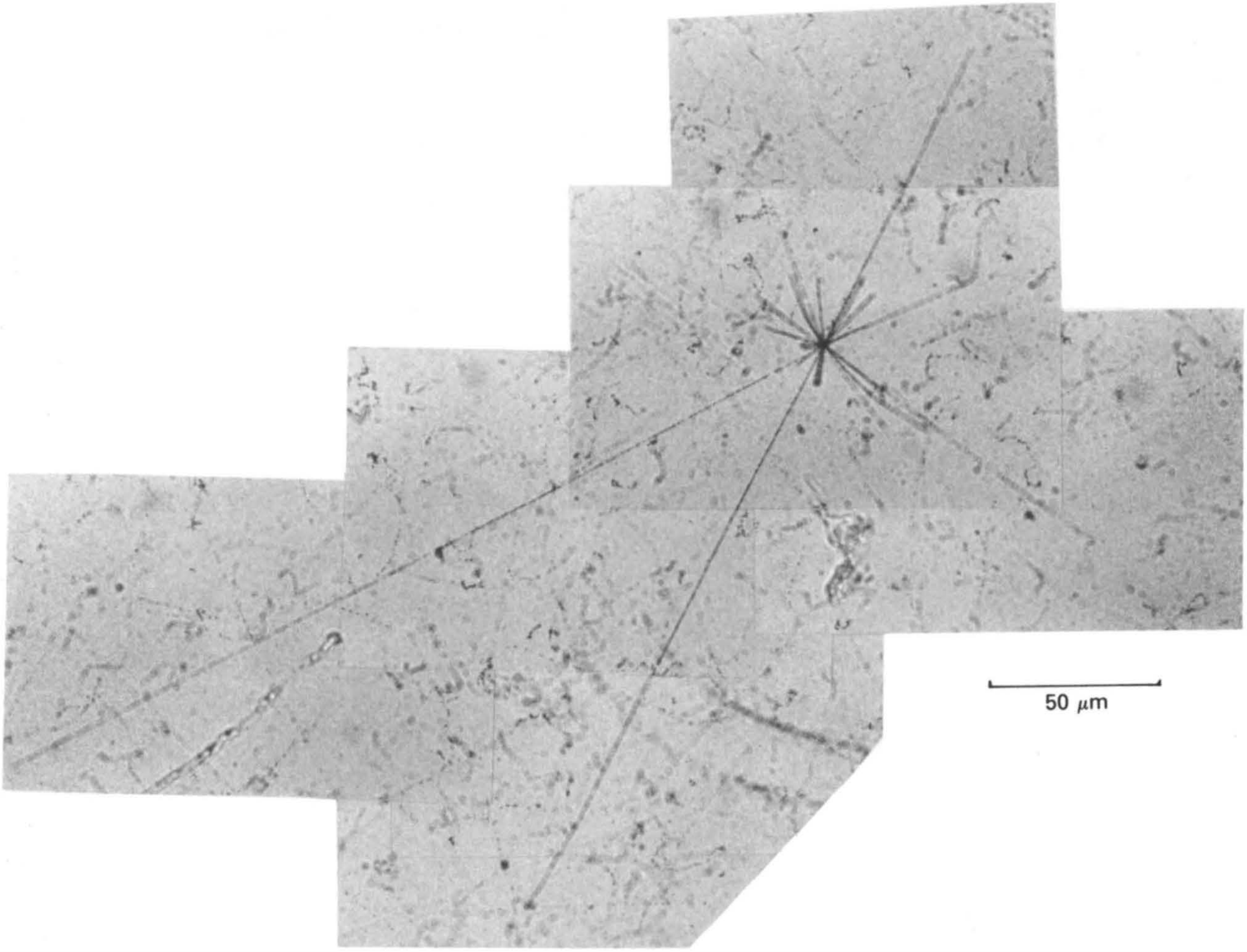

Fig. 3. Cold fusion star.

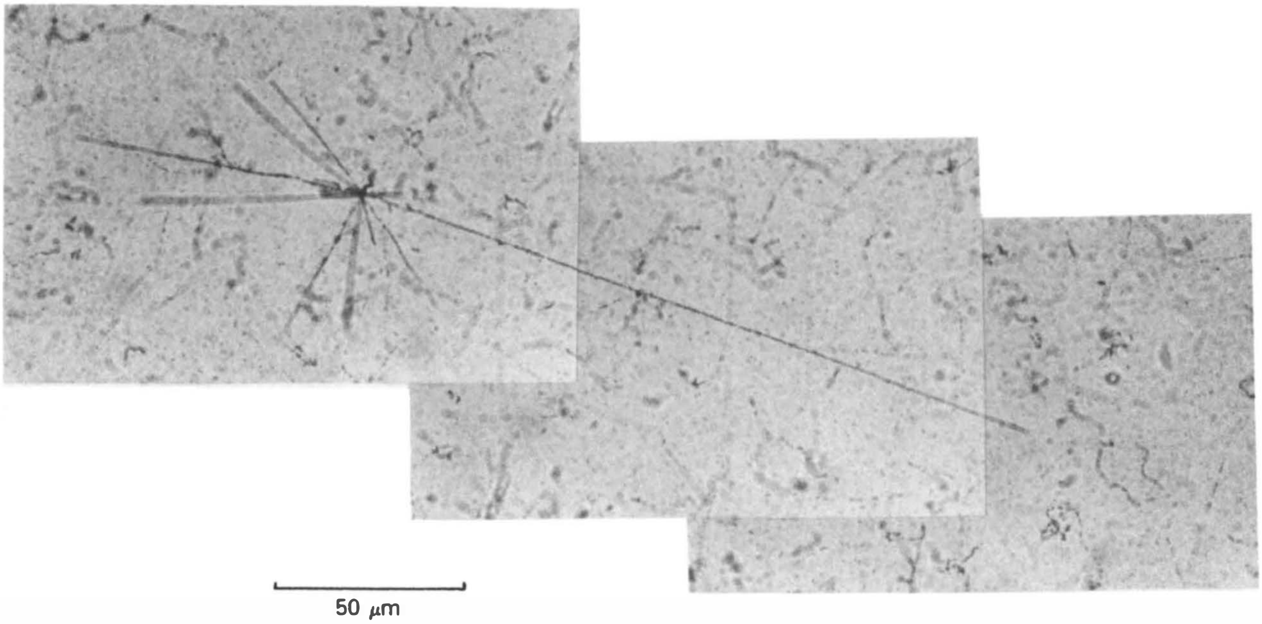

Fig. 4. Cold fusion star.

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