THE UNIVERSITY OF CHICAGO
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THE ENRICO FERMI INSTITUTE
FOR NUCLEAR STUDIES
5630 ELLIS AVENUE

September 28, 1967

Mr. Oscar E. Monnig
29 Chelsea Dr.
Ft. Worth, Texas 76115

Dear Mr. Monnig:

Thank you very much for letting me keep the remainder of Kirbyville. I shall try my best to make sure it is put to good use, and gets into the hands of the right peopel. I have always been concerned about the excessive rate of consumption of rare meteorites, and welcome this opportunity to show how much can be done with 200 mg. This material will suffice for the most basic measurements: age, mineral composition, and petrography. Unless these measurements show Kirbyville to be utterly unique, there should be no reason to carry out other types of measurements which are generally more wasteful of material.

Thank you for the clue about the grayish and white areas. In some meteorites of this structure, the gray areas are loaded with noble gases while the white ones are not. We shall separate the two fractions and measure them separately.

The x-ray exposure won't cause us any trouble. It might be a matter of concern to someone trying to do a thermoluminescence measurement. However, this technique is at a rather primitive stage at present, and I see no reason why Kirbyville should be studied by this method.

I was most interested in your notes on Kirbyville. You should certainly get them published, not only for the record, but also as a fine example of how to track down exact information on a meteorite fall 3 decades after the event.

I would not sneer at a 17 1/2 lb bronzite chondrite. A lot of ordinary chondrites that seemed commonplace only 6 years ago are now known to have some unique features.

Now to the Bells story. All together, we have received 3 Bells samples from the USNM.

1. 0.4 g rust-brown powder, from a vial marked "magnetic fraction".

2. 0.12 g fragments, magnetic, picked out under the microscope and described as "looking as fresh as any material on the surface of the 12-gram stone."

3. About 0.1 g black powder, from a 12 g stone in the USNM.

Samples 1 and 2 were measured on the mass spectrometer and turned out to contain virtually no noble gases of whatever origin: radiogenic, cosmogenic, or primordial. This does not prove that the samples were non-meteoritic: they might have come from a meteorite of very short cosmic-ray age (<0.1 m.y.) and very short gas-retention age (<100 m.y.). No other case is known in which both ages are short; usually only one is, if at all. Moreover, the samples looked quite unmeteoritic to me. They were rust-brown throughout, lacking the characteristic black color of carbonaceous chondrites.

Sample 3 looked a lot more promising, and I am almost ready to wager tha it is a meteorite. Unfortunately, this sample reached Chicago a few days after Mazor's departure last winter, and thus did not get measured. It is now in Houston, and will be measured by Dr. Heymann within the next few months. His new mass spectrometer is not working perfectly yet, and he does not want to risk this precious sample until the instrument is in top shape.

I think the material Ed Henderson picked up was a piece of genuine Bells along with some dirt. He and Roy Clarke were not at all keen about touching the 12 g piece and therefore distributed the loose material first. Let us see what Heymann finds. Perhaps one will have to appoint a committee to authenticate every crumb of Bells at the USNM!

Yours very sincerely,

Edward Anders

EA/jw