UNIVERSITY OF CALIFORNIA, SAN DIEGO
LA JOLLA, CALIFORNIA

SCHOOL OF SCIENCE AND ENGINEERING

October 3, 1962

Mr. Oscar E. Monnig
29 Chelsea Drive
Fort Worth 15, Texas

Dear Mr. Monnig:

As you may recall, we had several discussions with you while at the meeting in Socorro on the possibility of obtaining a few grams of the Crescent and Bells meteorites for our research. We feel that you might be interested in a fairly detailed description of what we intend to do with any samples you could send to us.

First, the electron-beam microprobe work, yielding a nearly complete mineralogical and gross chemical description of the specimen, can be done with a very small sample, preferably with a very large surface area. If you wish, you could have the preliminary results of this work for inclusion in your report on the fall and recovery of the Bells meteorite. Appropriate weight would be about one or two grams for this project.

Secondly, we can do trace element analyses by neutron activation, in a cooperative program between our group at La Jolla and Dr. Roman Schmitt at General Atomic, for about thirty elements with high sensitivity. These analyses would require at least about five grams, if all these elements are to be analysed for.

In both of the cases mentioned above, absolutely fresh materials would be much more valuable than materials which have been weathered or handled. In fact, it would probably not be worth doing these analyses on weathered or contaminated samples, due to the time and effort which would be required to do the work and the difficulty in interpreting the results.

There is another project, that of determinations of isotopic abundance ratios for rare earth elements and possibly for certain other elements as well, which would not require material in such good condition. This work, under the direction of Professor Rama Murthy, could be done on the weathered fragments of Bells, due to the small likelihood of contaminating this material with large amounts of terrestrial rare earths. Professor Murthy would need a relatively large sample, ten grams or more, for this investigation.

A final investigation which should be considered in the case of the unweathered Bells specimen is a search for "organized elements", as described by Claus and Nagy in their recent publications. In all probability, this could be carried out on a small portion of the sample for neutron activation analyses mentioned above.

As we suggested at Socorro, the scientific priority scale for these projects can best be determined by those persons who are already engaged in evaluating proposals for the use of meteorites from the large collections, e.g., Henderson, Moore, and Mason. Accordingly, we urge you to consult with any or all of these curators before providing any samples for scientific work.

Please note that we have access to a small collection here, and may be able to exchange some meteorite specimens for material in your collection, in order to avoid the depletion of your collection without some restitution. Alternatively, we could purchase from you the material we need for these projects without too much red tape. Please let us know what you would like to do, and if you would like to have any more detailed information about our proposed research on these meteorites.

With best regards, we remain,

Very truly yours,

Gordon Goles

Gordon Goles

Klaus Keil

Klaus Keil

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