

SMITHSONIAN INSTITUTION  
UNITED STATES NATIONAL MUSEUM  
WASHINGTON, D.C. 20560

March 21, 1968

Mr. Oscar E. Monnig  
29 Chelsea Drive  
Fort Worth, Texas 76115

Dear Oscar:

We have polished both faces on the cut through the last sample you sent and I am happy to find that the entire mass seems to consist of martensite, almost all. I located a small area where there was no martensite and suspect that below this there could be a troilite inclusion. If correct, it should be close to the surface so x-ray perhaps can penetrate deep enough to prove what is present. I am going to take this piece out to Battelle next week and while out there we will see if there is troilite body below this spot. Last week one of their staff was here and offered to do this and since this will not harm the specimen, I agreed.

We have been investigating the martensite structure to see if there is any variation in the nickel content in the martensite and we have used a special electron probe in one of the other government offices to examine the first specimen, the one with the large inclusion of troilite. All this can be done with no harm to the surface. The variations we have found seem to be minor ones but there seems to be variation in nickel. Textbooks tell us that martensite is a structure and there is no compositional difference in chemistry, so we want to explore this a little more.

When prints are available of the pictures I made I will send them to you.

Best wishes.

Cordially yours,



E. P. Henderson  
Curator Emeritus  
Division of Meteorites

Enclosure