

1972 May 19

Dr. Hassell Ledbetter,
National Bureau of Standards,
N.B.S. 275.03
Boulder, Colorado 80302

Dear Sir:

In accordance with your telephone request I am mailing you a 1390 gram sample of the Tishomingo, Oklahoma, iron meteorite with one polished and lightly etched face.

I understand you plan to use this in research on the nickel-iron phase diagram and that your work will be non-destructive. I expect the sample to be returned to me in its present condition.

This piece and the other half of it were submitted to the U. S. National some years ago and tested by them at Brookhaven, as I understood it, for Al_{26} and H_2 . They and Buccheit at Columbus have studied the structure intensively. There is a little spot on this surface where Henderson thought there might be a troilite inclusion just underneath, and I think they X-rayed it for that.

They made a great to-do over the martensitic structure, but would never tell me whether it was kamacite, taenite or plessite. If there is any validity to these distinctions I would think this is nothing but a mass of plessite. I think they almost wore out their electron microprobes on these specimens!

You will note a little rusting at two areas; if you want to remove this for any reason I have no objection. But I do think the Smithsonian boys do a beautiful job of polishing and etching and I would hate to see that ruined or changed in general.

Please acknowledge receipt. It will be interesting to hear what you plan and what you learn.

Sincerely,

Orvil Morrey

740585

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