

1965, Dec. 13

Mr. Glen Orr,  
c/o R. C. Orr,  
Route 2,  
Tishomingo, Oklahoma.

Dear Glen:

Thanks for sending the meteorite down with your mother. I expressed it to the U. S. National Museum the day I got it, putting your cigarbox container in a bigger carton with steel shipping bands around it. It weighed 5 pounds 8 ounces on our parcel post scales.

They tell me it contains about 30% of nickel, and this is extremely high for a meteorite, as they are more likely to run around 5 to 10%. However, the other surprise is that when the little section I sent them was tested with an electron probe, which is a way of running a beam across the specimen without damaging it, the piece seems to be almost uniform as a mixture of nickel and iron, with no variation even where the figures (the little lines) show up. Now most meteorites separate out into phases with bands of nearly all iron and smaller lines of mostly nickel on the edges of the bands, which is characteristic of what happens when such a mixture cools slowly.

This iron, however, acts like one which cooled rapidly, and that is what is throwing them off. It has been generally thought that the iron meteorites come from the interior of one or more asteroids that broke up on colliding in the past, and on the inside of even a small planet only a few hundred miles in diameter, the metal mixture would cool slowly and the iron and nickel differentiate to some extent.

I'm telling them they just have to look closer and maybe alter their thinking, because I just can't conceive how these pieces could be anything but meteorites. I have sent them some of the pictures we took when we had them all together out in the yard. It may be a few weeks before I hear more, but I'll let you know when I do.

Sincerely,