

- 1) major constituent: quartz,
- 2) large minor constituent: spinel-type compound, close to magnetite, Fe_3O_4 ,
- 3) small minor constituent: goethite, $\alpha\text{-Fe}_2\text{O}_3\cdot\text{H}_2\text{O}$,
- 4) trace constituent: lepidocrocite, $\gamma\text{-Fe}_2\text{O}_3\cdot\text{H}_2\text{O}$.

Neither X-ray diffraction pattern showed any indication of any other crystalline constituents, or of any amorphous material.

The results of the semi-quantitative spectrographic analysis are as follows:-

Fe = PC,

Mn = 6, Si = 2, Ni = 0.6,

Cr = 0.3, Cu = 0.2, W = 0.2, Sn = 0.1, Al = 0.1,

Co = 0.04, Mg = 0.03, Ba = 0.02, V = 0.008,

Mo = tr, Ti = tr.

The abbreviations PC and tr indicate principal constituent and trace, respectively. The figures given are percentages by weight.

CONCLUSIONS

The X-ray diffraction analysis indicated that the unidentified aerial object consisted of a metallic face-centred cubic compound, with a unit-cell dimension agreeing with those of 1) austenitic steel, and 2) meteoric iron. The semi-quantitative spectrographic analysis showed, however, that there was insufficient nickel present for the material to be of meteoric origin. The amount of