will generally be the case, and no filter was used in order to preserve intensity. The identification of the β lines is easily made by momentarily inserting a filter in front of the detector. The α and β lines of the diffraction pattern are indexed separately.

Quantitative measurements taken from a more careful scanning of the intense peak in the two patterns yields a change in volume consistent with Bridgman's compressibility data to an accuracy of a few percent, even though no corrections were applied to the data. The crystal structure of the high-pressure modification is definitely CsCl-type, as can be easily seen, and is consistent with the volume change.

The feasibility of compressibility measurements can also be seen from the slight but clearly discernible change in position of the lines as a function of pressure. Quantitative measurements without corrections agreed with Bridgman to within a few per cent. The question of accuracy is of prime importance in compressibility measurements since an X-ray measurement measures a linear dimension and, therefore, must be three times as precise as a volume measurement in order to yield the same accuracy in the compressibility.

Although several refinements in technique and calibration are yet to be made, the general operation of the apparatus is very encouraging. The advantage of instantaneous observation of structural change gives a tremendous versatility and insight into the behavior of the test materials.