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## Tetrahedral Voids

## A void or empty space in a lattice which is surrounded by four spheres is called a tetrahedral void.For example the void B are tetrahedral voids because they are surrounded by four sphees three in first layer and the fourth in the second layer.

## Tetrahedral Voids

## Octahedral Voids

## A void which is surrounded by six spheres,is called the octahedral void.The voids c in fig are octahedral; oids because ,they are surrounded by six spheres,there in the first layer and three in the second layer.these voids are shown in.

## Otahedral void

**Bragg’s equation**

Let the horizaontal line be the parallel planes in a crystal having interplanar distance,d.A beam of X-ray falls on the crystal at an angle of .Some of these rays are reflected by the upper plane at an angle of ,while some others are absorbed and reflected by successive planes.Let AB & DE be the perpendiculars drawn on the incident and reflected beams then waves will be in the same phase provided the difference of path length [LN+LM] of waves reflected from the first two planes will be equal to the whole number (n) multiple of wavelength () of X-rays.

LN+NM = n

A D

B E

O

L M

N

Since Δ OLN and OMN are congruent,therefore LN=NM

n = 2LN

Sin = =

LN= d Sin

OR, n = 2dsin