

# Poster Presentations

[MS41-P01] A new look at the diffraction grating for non-normal incidence Philip Bradfield (retired), formerly of the

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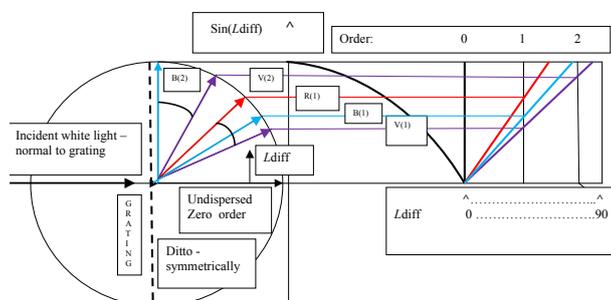
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A new visualisation is suggested for the non-normal incidence case for a plane diffraction grating, which allows exploration of the non-symmetrical location and dispersion of the several - generally overlapping and incomplete - orders of spectra of incident white light.

**Keywords:** diffraction, dispersion, overlapping

Plane Diffraction Grating  
Normal Incidence –  
Illustration/Direct derivation of spectral dispersion :  
a simple case

1<sup>st</sup> order : complete, and non-overlapping with  
2<sup>nd</sup> order : incomplete (Violet to Blue)



Plane Diffraction Grating  
Non-normal incidence, in a principal section  
Last complete spectrum: S(+3); V(3) ... R(3)  
S(4) ends at Y(4); S(5) ends at B(5)

$$n * \lambda = d * \{ \sin(L_{diff}) - \sin(L_{inc}) \} : \text{here, } L_{inc} -ve$$

