

Physics 136a, Week 8: Diffraction and Interference

(Dated: November 26, 2011; due **Monday December 5, 2011**)

The maximum number of points you can get for this assignment is **50**, although you could choose to do problems that worth more than 50 points.

This week we discussed diffraction and interference of light. We covered Secs. 8.4.3 – 8.6 (Version 1108.1) and Secs. 9.1 – 9.3 (Version 1109.1) of Blandford and Thorne (BT).

1. Fresnel Zone Plate. Exercise 8.9 of BT. [15 Points]
2. Seeing in the atmosphere. Exercise 8.10 of BT. [15 Points]
3. Light scattering in LIGO. Exercise 8.15 of BT. [25 Points]
4. Lateral coherence of sun light. Exercise 9.2 of BT. [10 Points]
5. COBE measurement of the CMB. Exercise 9.5 of BT. [15 Points]
6. Interferometry from Space. Exercise 9.8 of BT. [15 Points]