Sample Data Set – Atomic Spectra

PART 1

Table 1: Spectral lines of Na

Color of the line observed	Order number (n=1)	Angular Position of Left Image Θ_L	Angular Position of Right Image Θ_R	Average Angular Position of Image Θ	sinΘ	Experimental Wavelength λ (Å)	Theoretical Wavelength λ_t (Å)	Percentage Error (%)	Maximum Rel. Error in Wavelength $\Delta\lambda$ (Å)
Violet	1	164°17’	195°10’						
Green-blue	1	162°41’	196°42’						
Green	1	159°59’	158°43’						
Yellow	1	159°11’	157°55’						
Red	1	158°10’	156°54’						

These are correct.
For violet and green-blue;
Angular position of Right Image= $\Theta_R - \Theta_{ref}$
Angular position of Left Image= $\Theta_{ref} - \Theta_L$
Then average these two.

Treat these as they are measured from left.
For green, yellow and red;
Angular position of Right Image= $\Theta_{ref} - \Theta_R$
Angular position of Left Image= $\Theta_{ref} - \Theta_L$
Then average these two.