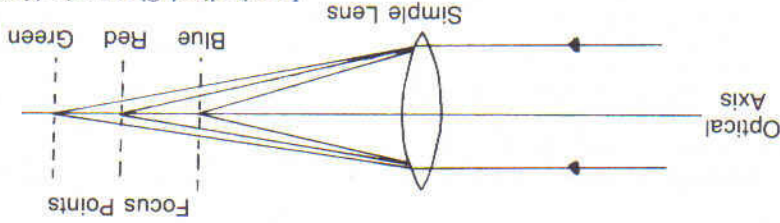


index of the glass differs with the transmission through the glass according to the wavelengths of light. The optical effect is color fringing and appears to the eye as a registration error. *Note:* a small degree of lateral chromatic aberration is acceptable as long as it is constant within the table as long as it is constant within the zoom/focus range. This is possible because the individual tube scans can be adjusted in the camera head. Also of note: with the increasing popularity of CCDs lens tolerances will have to be tightened as solid state chips have the range of adjustment that tubes do.

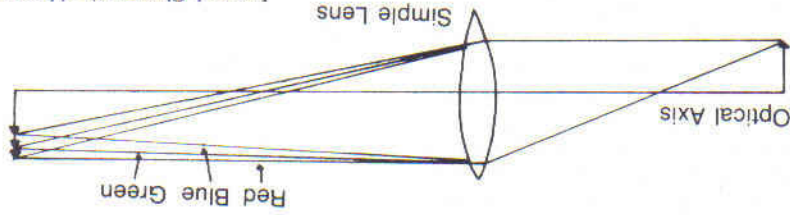
• Coma is an aberration that also increases as the lens is stopped down. Coma is caused by light rays which are off-axis to the optical axis not being focussed to a point, instead they form an image which is comet-like, tail and all. This can give rise to inward coma, the tail pointing towards the center of the image plane or outward coma, which is in the opposite direction. A lens without correction for coma will lack good contrast on the edge of images, giving rise to poor edge definition and sharpness.

• Astigmatism is a phenomenon; a lens that has been properly corrected for coma and spherical aberration still doesn't focus off-axis images to a point, the image is oval-shaped or will appear as a pair of lines. Moving the focussing plane back-

*Longitudinal Chromatic Aberration*

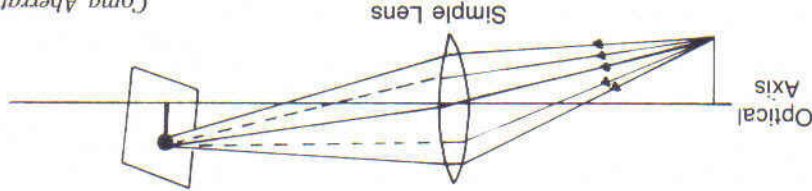


*Lateral Chromatic Aberration*



*Comet Tail Image Due to Comatic Distortion*

*Coma Aberration*



Footnotes for this article and diagrams are as follows: *The Canon Guide Book of Television Optics for Television System:* 1—page 17; 2—page 17; 3—page 55; 6—page 30, and *Technique of Lighting for TV and Motion Pictures:* 4—page 31; 5—page 3.