

Photometric systems

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Photometric systems

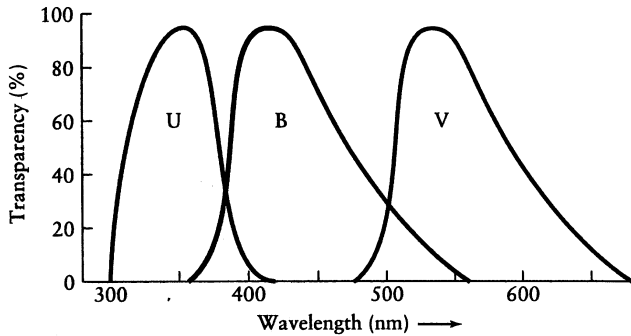
$$m_1 - m_2 = -2.5 \log \frac{\int_{\lambda_a}^{\lambda_b} \alpha_1^2 I_1(\lambda) T_i(\lambda, d_1) T_a(\lambda, d_1) T_t(\lambda) T_f(\lambda) r(\lambda) d\lambda}{\int_{\lambda_a}^{\lambda_b} \alpha_2^2 I_2(\lambda) T_i(\lambda, d_2) T_a(\lambda, d_2) T_t(\lambda) T_f(\lambda) r(\lambda) d\lambda}$$

- Set of spectral ranges
- Set of magnitudes, colours and indices
- Standard stars list

Photometric systems

- Visual magnitudes m_v
- Photographic magnitudes m_{pg}
- Colour index $CI = m_{pg} - m_v$

Johnson system



Johnson system

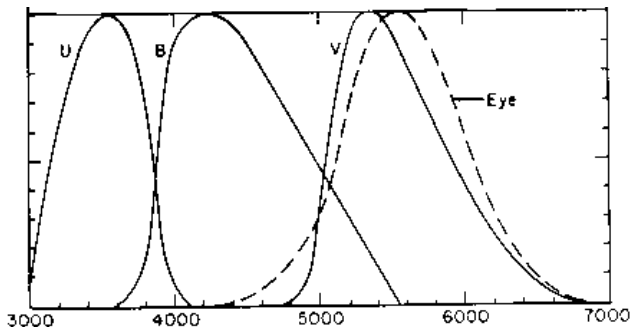
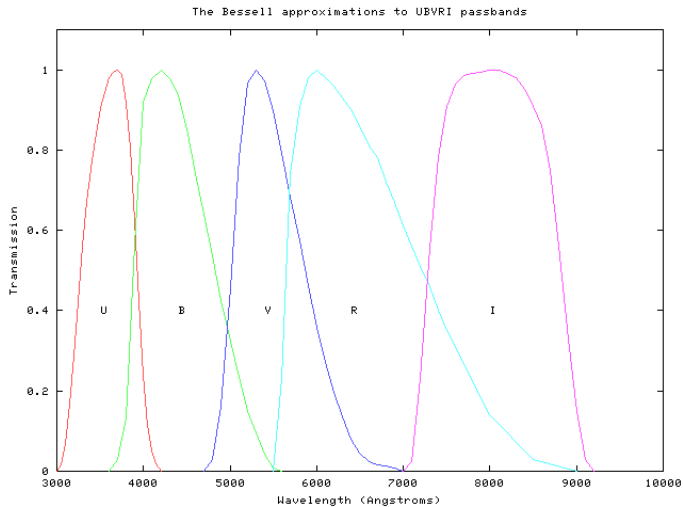
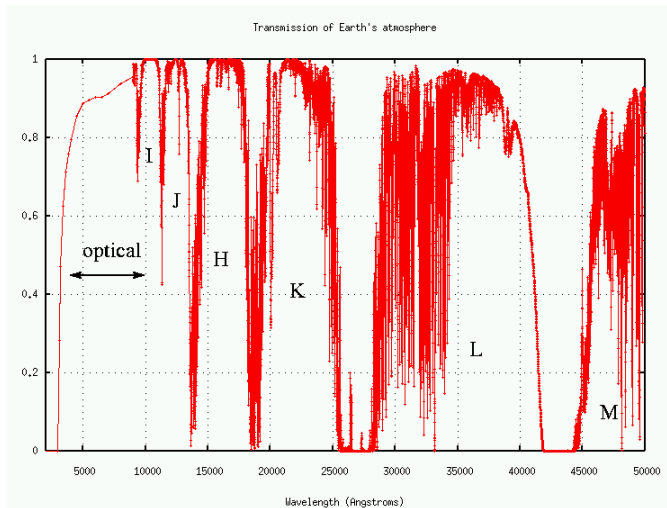


FIG. 1-4. SENSITIVITY CURVES OF THE EYE AND OF THE UBV PHOTOMETRIC SYSTEM

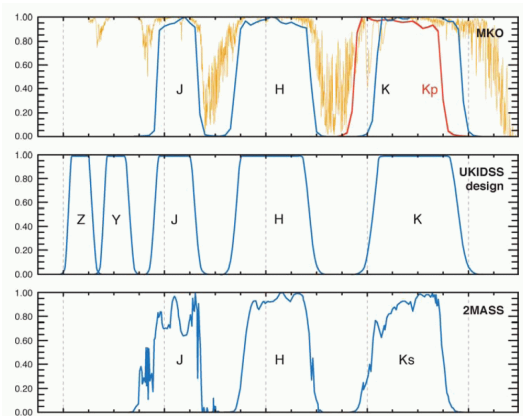
Johnson-Cousins system



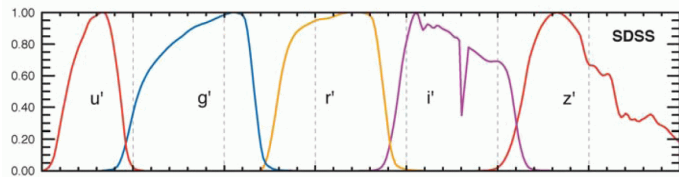
Atmospheric transmission



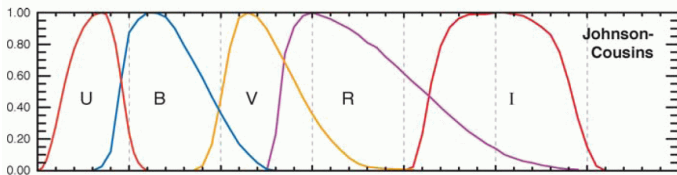
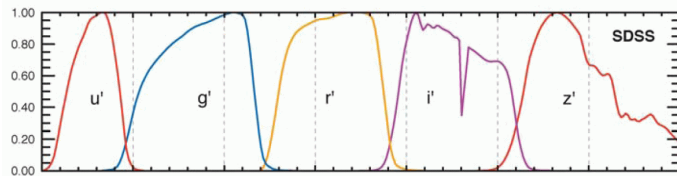
Infrared system



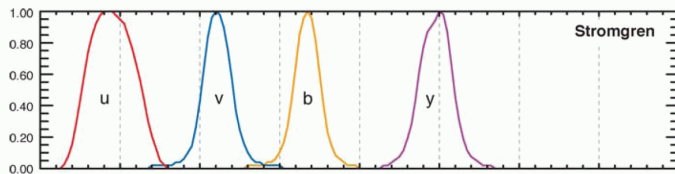
Sloan system



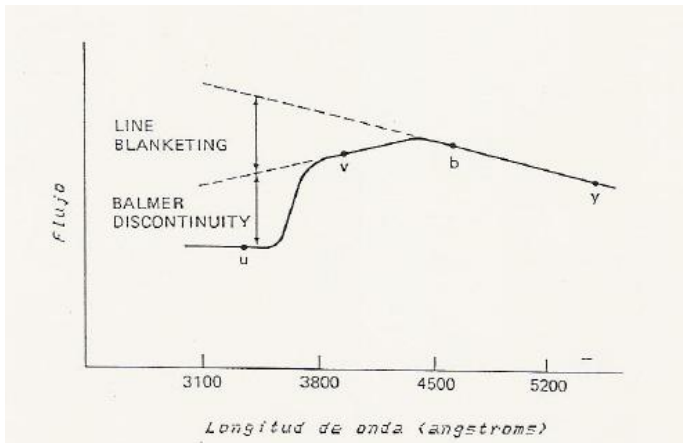
Sloan system



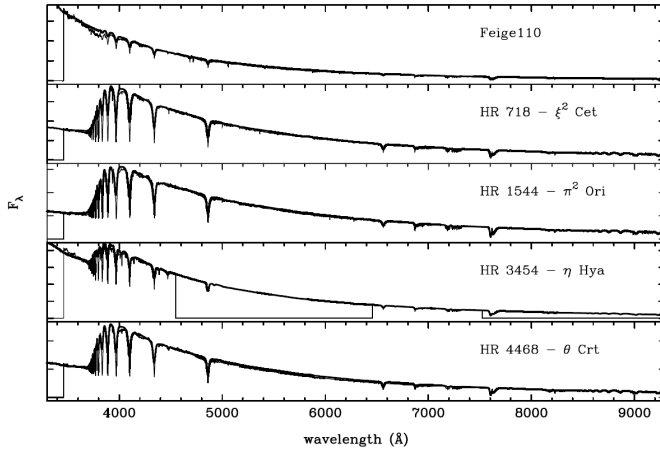
Strömgen system



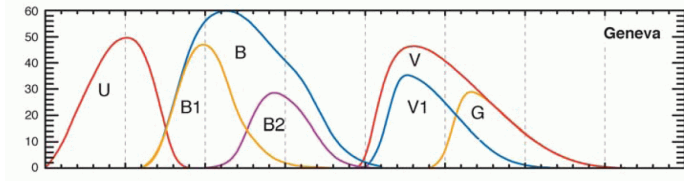
Strömgen system



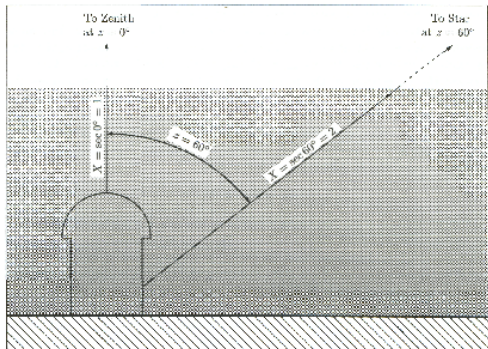
Strömgren system



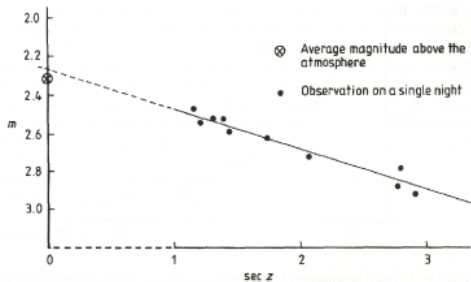
Geneva system



Atmospheric extinction



Atmospheric extinction



Atmospheric extinction

- Instrumental magnitudes:

$$m_0(\lambda) = m(\lambda) - k_\lambda X$$

- In wide band systems:

$$m_0(\lambda) = m(\lambda) - (k_\lambda + k'_\lambda(B - V))X$$

Standard transformation equations for the Johnson UBV system:

- $V = v_0 + \epsilon(B - V) + Z_v$
- $(B - V) = \mu(b - v)_0 + Z_{b-v}$
- $(U - B) = \psi(u - b)_0 + Z_{u-b}$