

Spectral classification in the exoplanet fields from CCD Strömgren photometry

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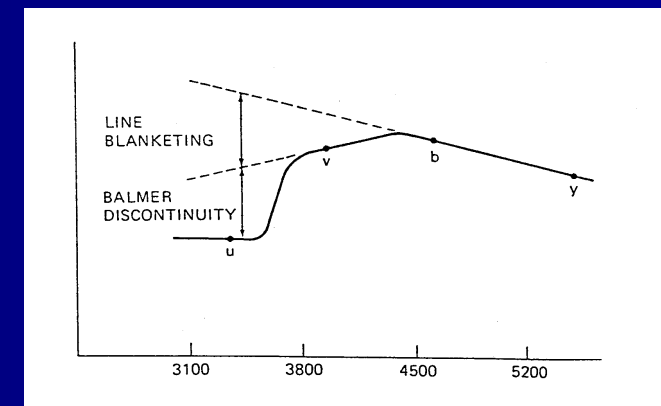
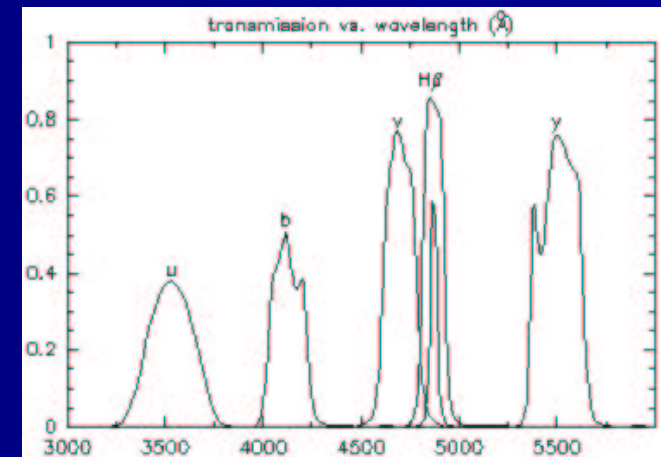
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Strömgren System

- V
- $(b - y)$
- $m_1 = (v - b) - (b - y)$
- $c_1 = (u - v) - (v - b)$
- $[m_1] = m_1 + 0.32(b - y)$
- $[c_1] = c_1 - 0.2(b - y)$
- $\beta = H\beta_{narrow} - H\beta_{wide}$



Observations

- 1.5m. telescope at Calar Alto (Almería, Spain)
- 24 - 31 January 2003
- Filters used:
Strömgren *uvby*,
Crawford H β narrow and wide,
H α narrow and wide
- Only two observing nights
- Five 7'x7' fields observed



Transformation & accuracy

Transformation equations:

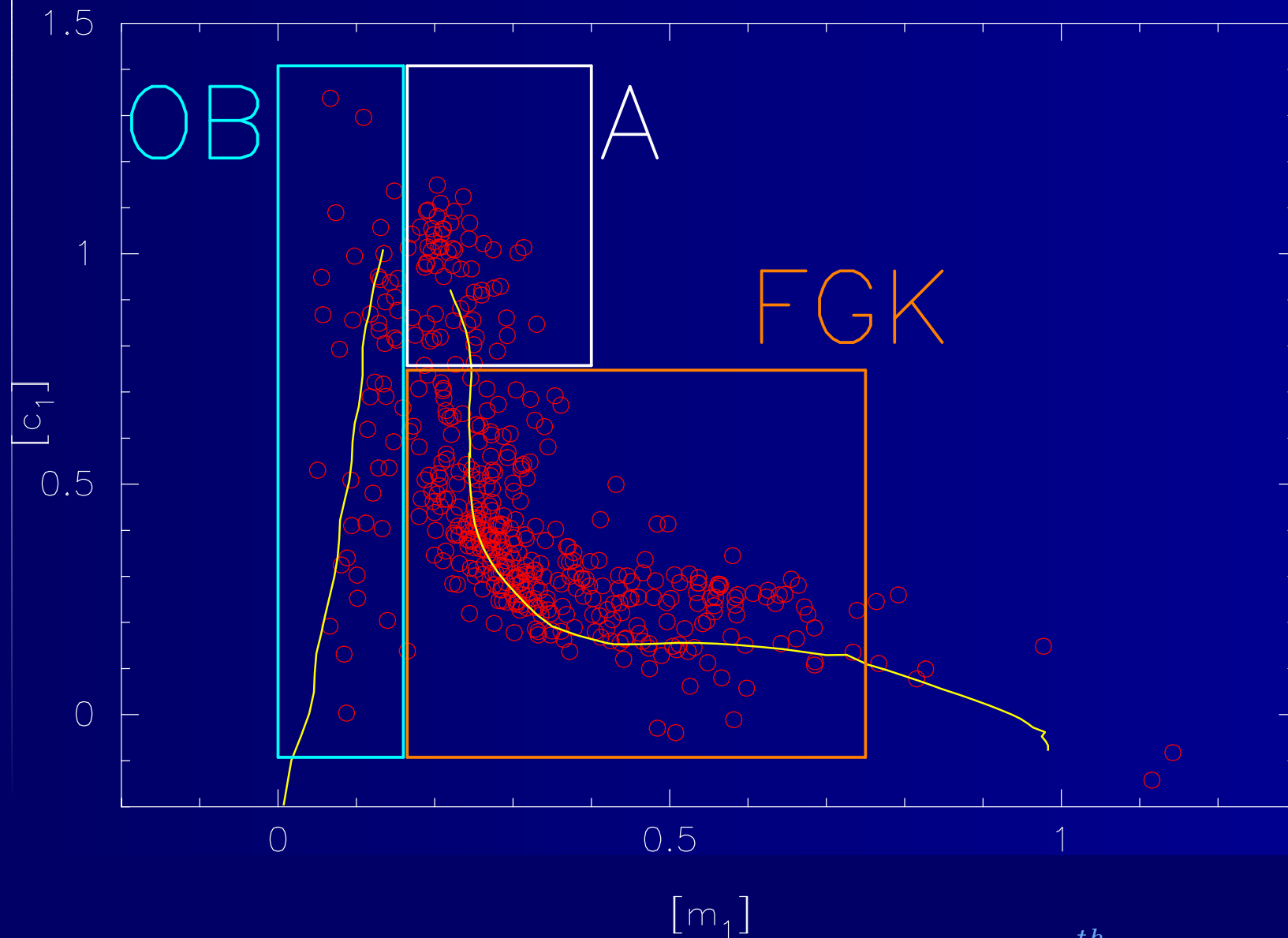
- $V = -4.811 + 0.015(b - y) + y_n$
- $(b - y) = -0.441 + 0.997(b - y)_n$
- $m_1 = 0.125 + 0.970m_{1,n} - 0.006$
- $c_1 = 0.459 + 1.037c_{1,n} - 0.205$

- $\beta = -0.613 + 2.033\beta_n$

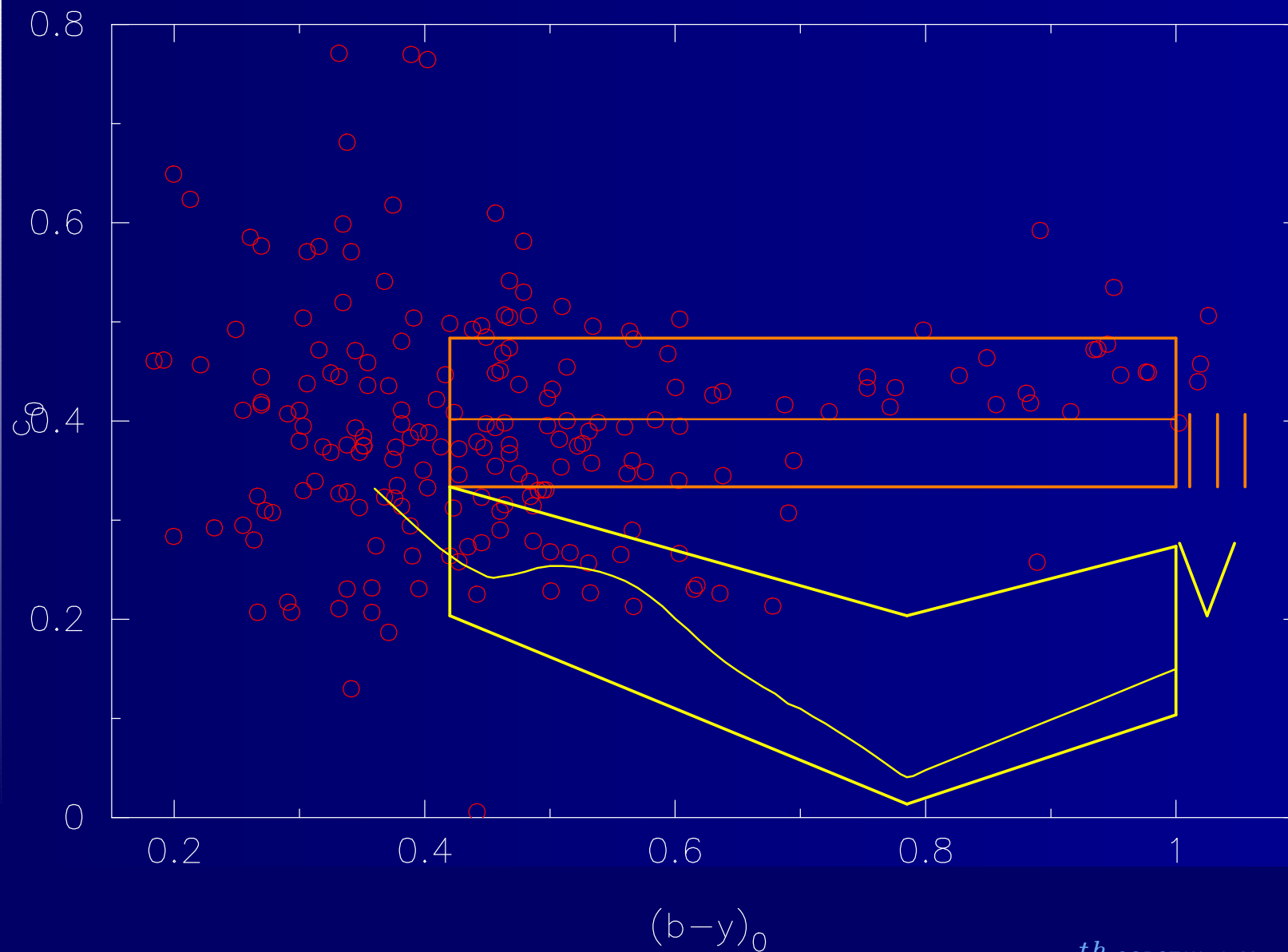
Photometric accuracy:

V	$(b - y)$	m_1	c_1	β
0.024	0.015	0.020	0.023	0.039

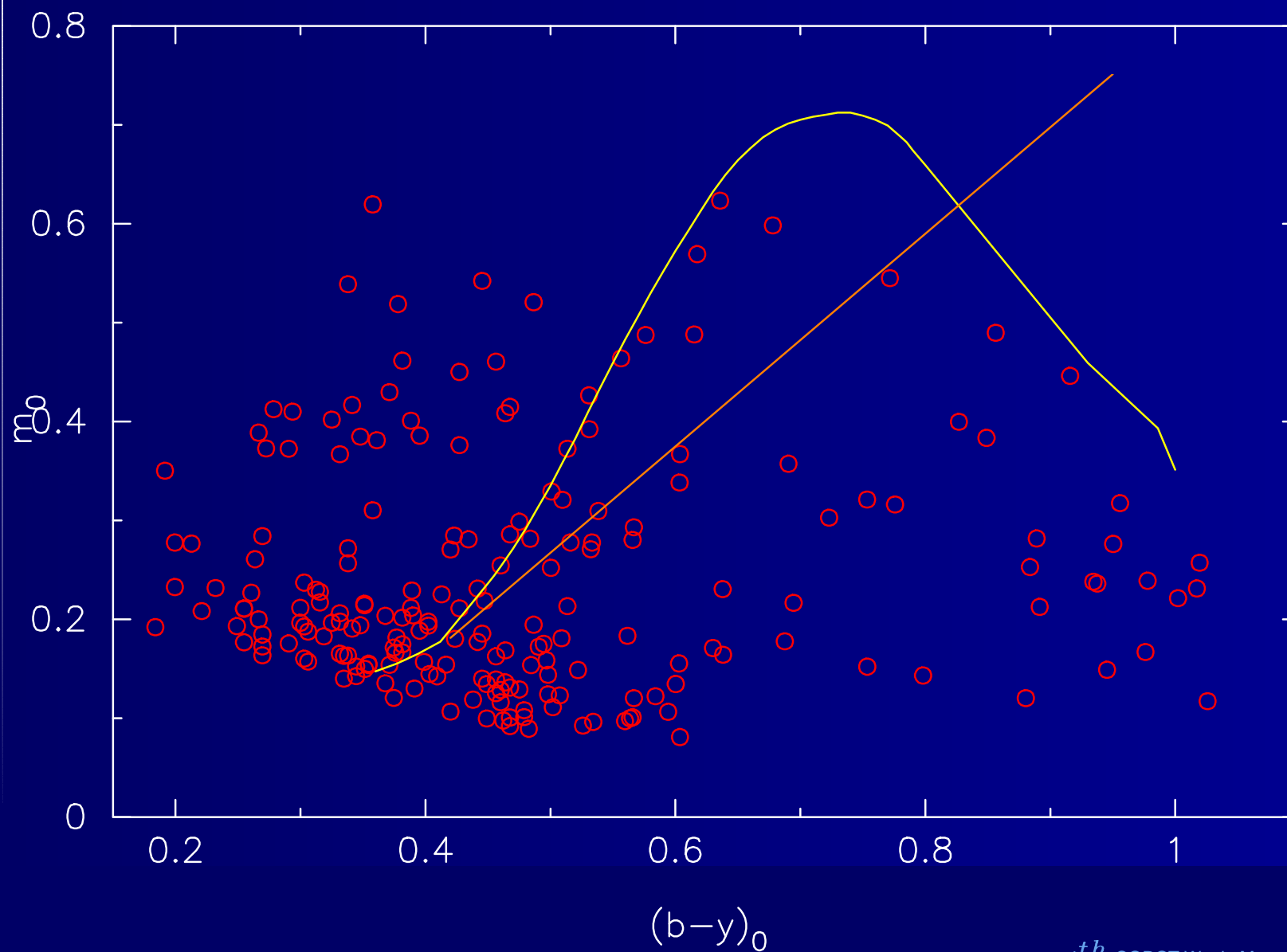
Reddening Free $[m_1] - [c_1]$ Diagram



$(b - y) - c_1$ Diagram



$(b - y) - m_1$ Diagram



Conclusions

Strömgren CCD photometry provides:

- Discrimination between reddened OB stars and intrinsically red stars
- Discrimination between giant and dwarf stars in the GK range
- Detection of high metallicity FGK stars, which are good candidates for exoplanet search