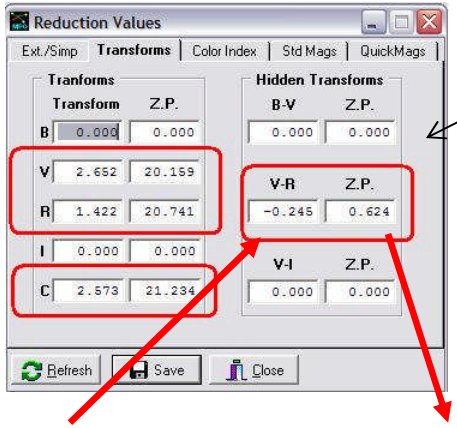
Process overview – as a system of equations #1

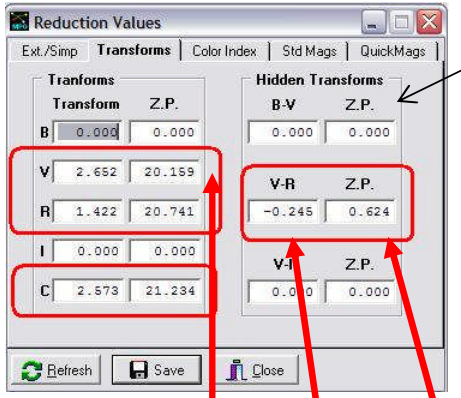
PhotoRed

Extract target magnitudes → **Reduce - Reference**
-Transforms
-Color index

See *Lightcurves* at Chap. 5 for variable definitions



Transforms



Transforms

$$CI = (ci - k'*X) + ZP$$

$$\Delta (M - m) = T_v * CI + ZP - k'*X$$

$$\Delta (V - R) = \Delta (v - r) - k'*X + ZP$$

Name : LW CAS 0045

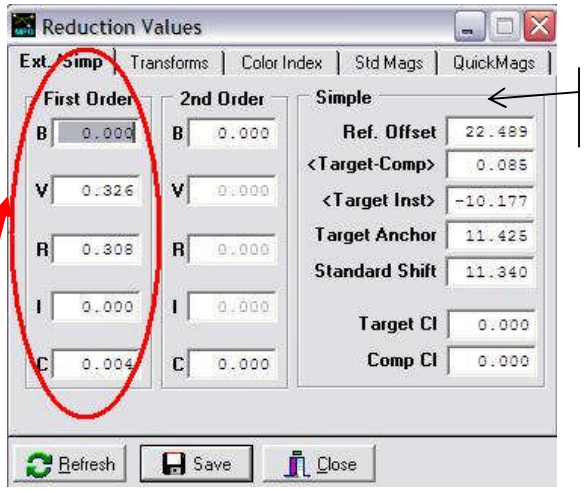
2	TRUE	02:57:0...	+60:43...	1/23/2...	1.080	V	-7.615
2	TRUE	02:57:0...	+60:43...	1/23/2...	1.080	V	-7.685
2	TRUE	02:57:0...	+60:43...	1/23/2...	1.079	R	-8.529
2	TRUE	02:57:0...	+60:43...	1/23/2...	1.079	R	-8.527
2	TRUE	02:57:0...	+60:43...	1/23/2...	1.079	C	-8.854
2	TRUE	02:57:0...	+60:43...	1/23/2...	1.079	C	-8.828

***Lightcurves* Eq. 5.5 and 5.6**

Process overview – as a system of equations #2

PhotoRed

Reduce - Reference
-Transforms
-Color index
-Extinction

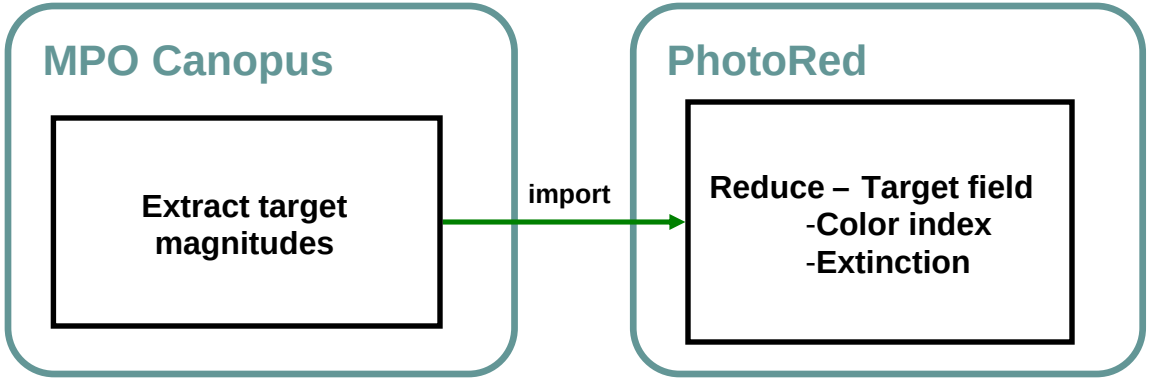


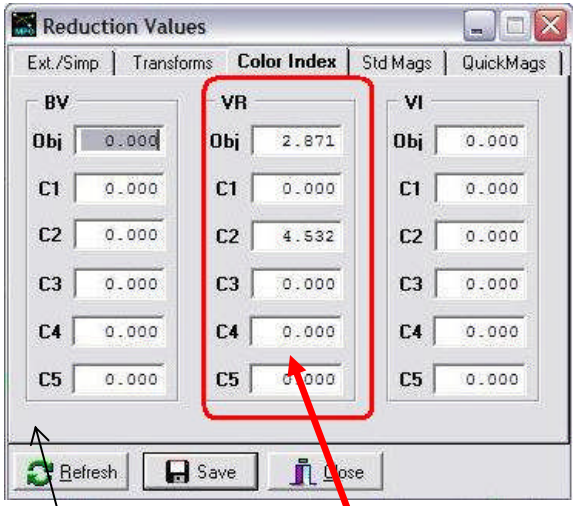
First-Order All Sky

$$k' = (v_{high} - v_{low}) \; / \; (X_{high} - X_{low})$$

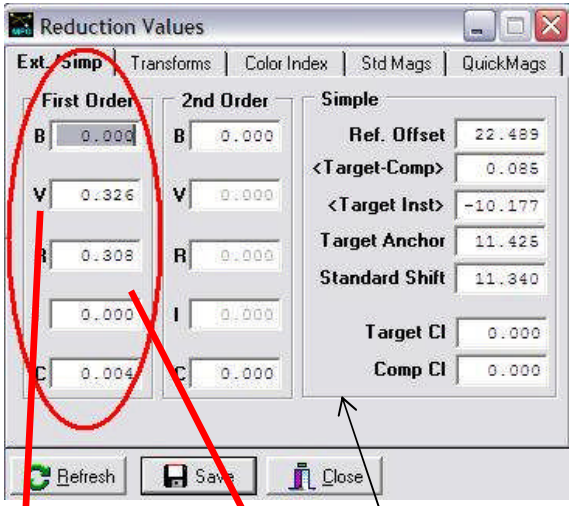
Lightcurves **Eq. 5.8**

Process overview – as a system of equations #3

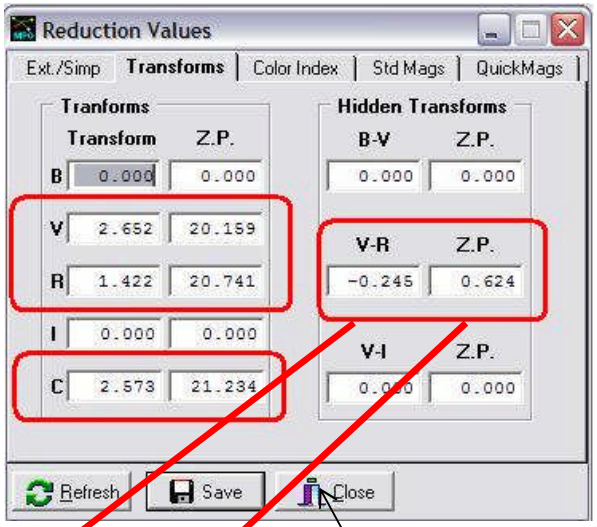




Color Index (Comps/Target)



First Order Comps



Transforms

$$CI = (((\, m_1 - k'_1X) - (m_2 - k'_2X)) * T_{CI}) + ZP_{CI}$$

Lightcurves Eq. 5.9

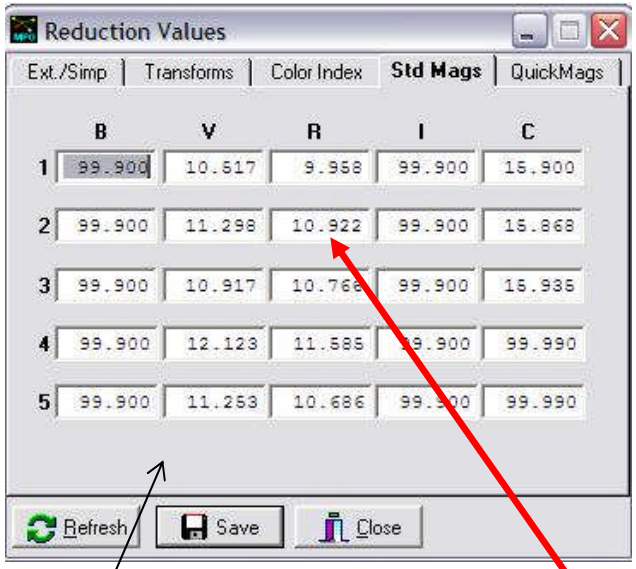
Process overview – as a system of equations #4

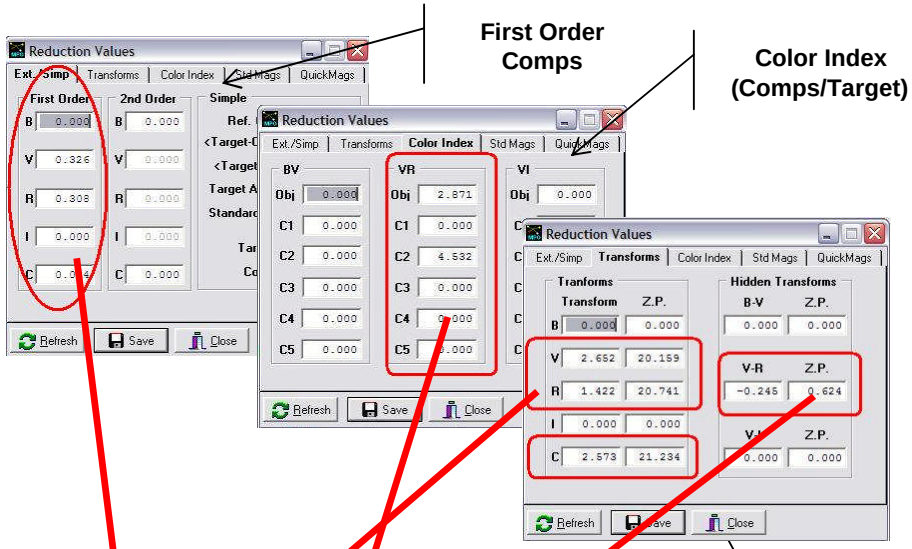
PhotoRed

Reduce – Target field
-Color index
-Extinction

→

Convert target field to standard magnitudes





Comps Standard Mags

Transforms

$$M = m - X*k' + (T_m*CI) + ZP$$

Lightcurves Eq. 5.11 without second order extinction factor

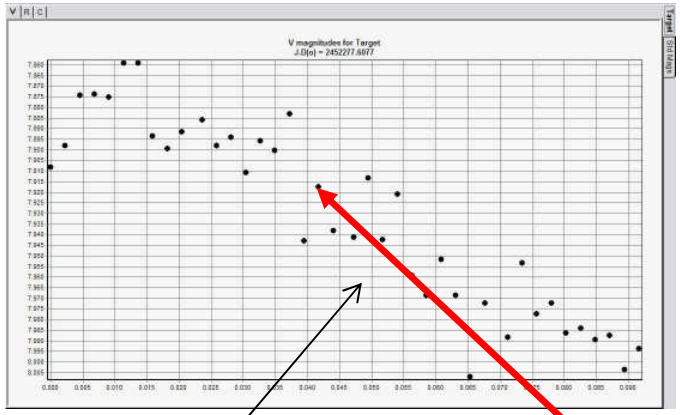
Process overview – as a system of equations #5

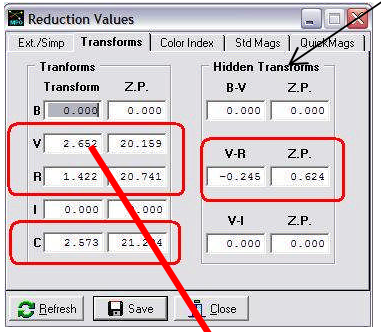
PhotoRed

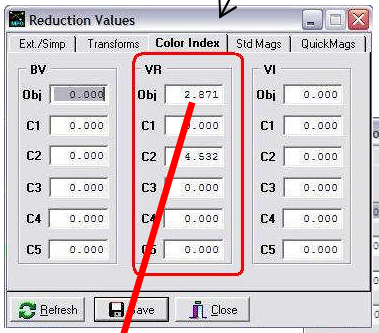
Reduce – Target field
-Color index
-Extinction

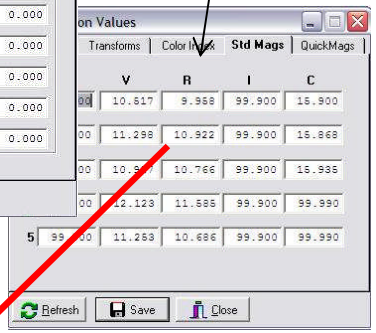
→

Convert target field to standard magnitudes









Transforms

Color Index (Comps/Target)

Comps Standard Mags

Target Standard Mags

$$\Delta M = (m_o - m_c) + T^*(CI_o - CI_c)$$

Lightcurves **Eq. 5.3, see id. at p. 68**