

ERRATA

Corrections to Reviews in Mineralogy Vol. 41 – High-Temperature and High-Pressure Crystal Chemistry

Chapter 16 “High-Temperature, High-Pressure Diffractometry” Pages 559-596

R.J. Angel, R.T. Downs and L.W. Finger

Some typographical errors have been identified in the published volume concerning the equations involved in the 8-position centering method, described on pages 573-574.

There was a mistake made in transforming the equations between coordinate systems that resulted in an error in the expressions given for the offsets of the crystal from the center of the diffractometer, in terms of the θ -coordinate system (Busing and Levy 1967). The correct version is:

$$\Delta x_{\theta} = \frac{S_x R_S}{\cos \theta} \quad \Delta y_{\theta} = \frac{S_y R_S}{p_{\theta} \sin \theta} \quad \Delta z_{\theta} = \frac{2\Delta(x_{xl}) p_{\theta} \sin \theta}{\left(\frac{1}{R_S} + \frac{1}{R_C}\right) \cos \omega} \quad (15)$$

Two signs in the second row of the matrix given in equation (17) are incorrect. The correct version is:

$$\Delta \mathbf{x}_{\phi} = \begin{pmatrix} \cos \omega \cos \chi \cos \phi - p_{\omega} p_{\phi} \sin \omega \sin \phi & -p_{\omega} \sin \omega \cos \chi \cos \phi - p_{\phi} \sin \phi \cos \omega & -p_{\chi} \sin \chi \cos \phi \\ p_{\phi} \cos \omega \cos \chi \sin \phi + p_{\omega} \sin \omega \cos \phi & -p_{\omega} p_{\phi} \sin \omega \cos \chi \sin \phi + \cos \phi \cos \omega & -p_{\chi} p_{\phi} \sin \chi \sin \phi \\ p_{\chi} \cos \omega \sin \chi & -p_{\omega} p_{\chi} \sin \omega \sin \chi & \cos \chi \end{pmatrix} \Delta \mathbf{x}_{\theta} \quad (17)$$

Lastly, the reader should have been cautioned on the use of expressions for the true value of χ given in Equation 13 and the value of χ_0 given in Equation (14). If the positions for χ as given in Table 2 are used, the factor of 4π should appear as:

$$\chi_i = (A_1 + A_2 + A_3 + A_4 - A_5 - A_6 - A_7 - A_8)/8 \quad (13)$$

$$\chi_0 = (A_1 + A_2 + A_3 + A_4 + A_5 + A_6 + A_7 + A_8 - 4\pi)/8 \quad (14)$$

If other settings are used, e.g. $(\chi-\pi)$ instead of $(\pi+\chi)$ for equivalents 3 and 4 in Table 2, then the equations given in the original script are correct.