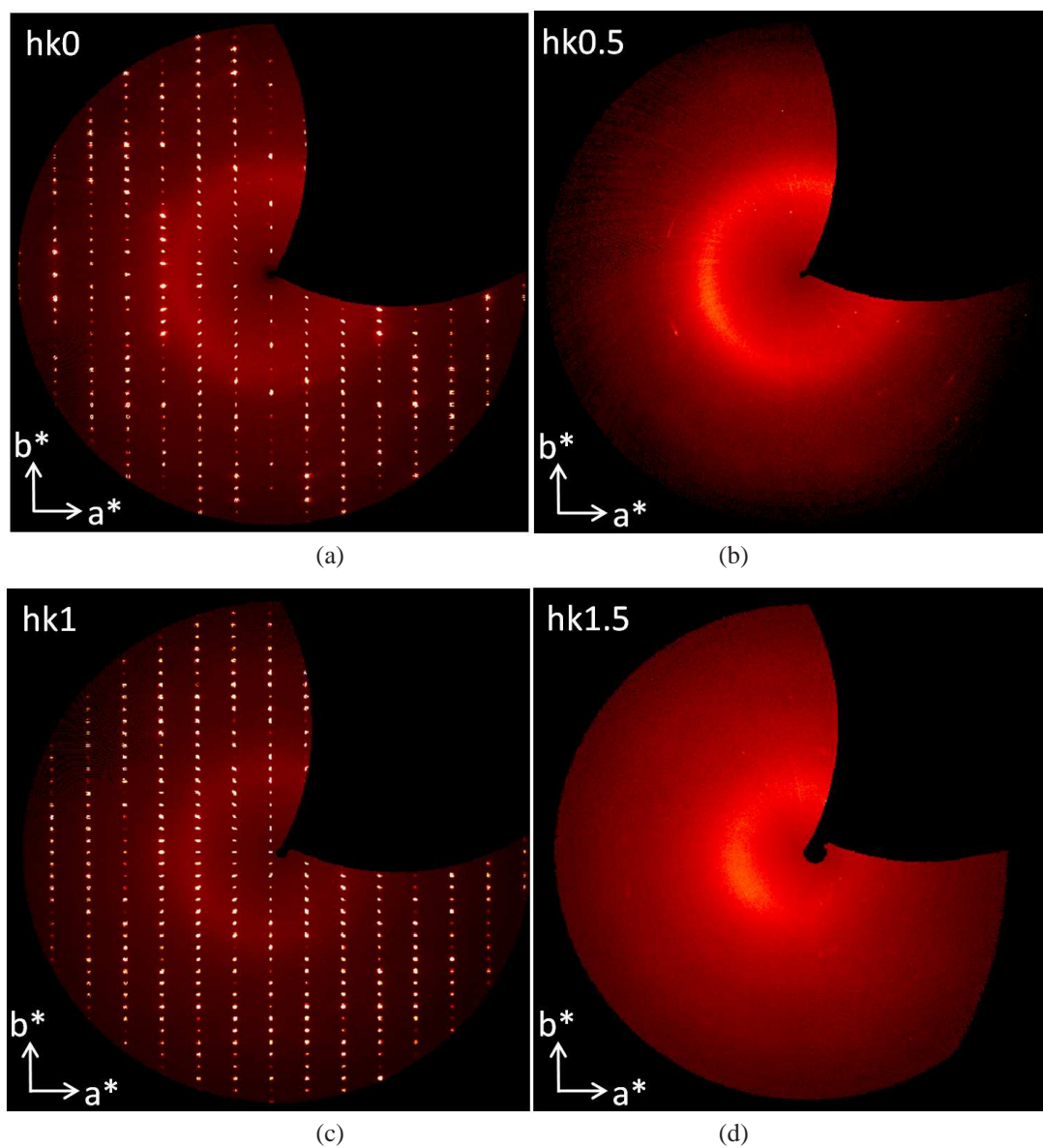


Supporting information

1 Entire observed and calculated diffraction sections.

**Figure 1**Observed reciprocal space reconstructions down c prior to drying (a) $hk0$ (b) $hk0.5$ (c) $hk1$ (d) $hk1.5$

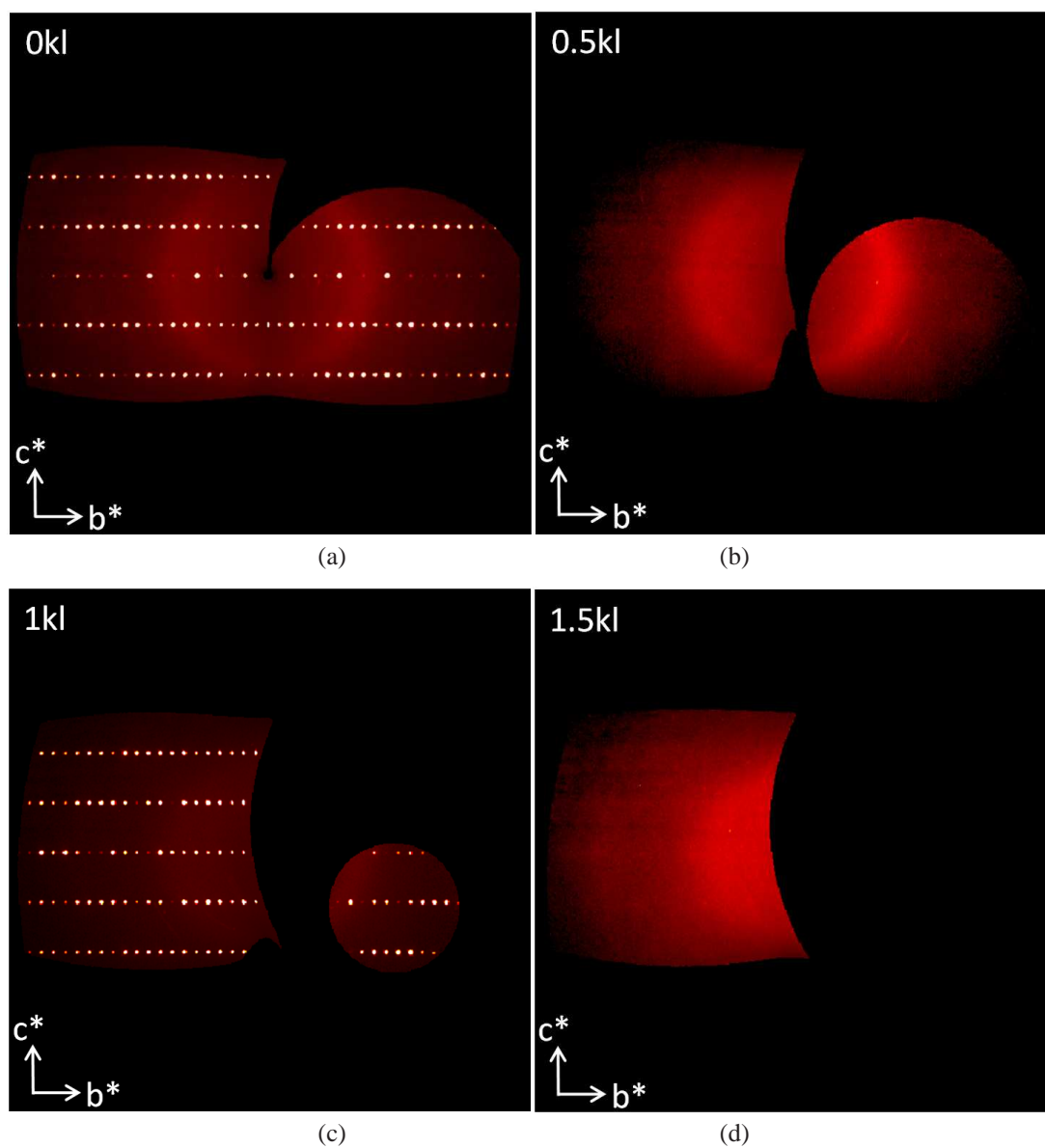


Figure 2
Observed reciprocal space reconstructions down a prior to drying (a) $0kl$ (b) $0.5kl$ (c) $1kl$ (d) $1.5kl$

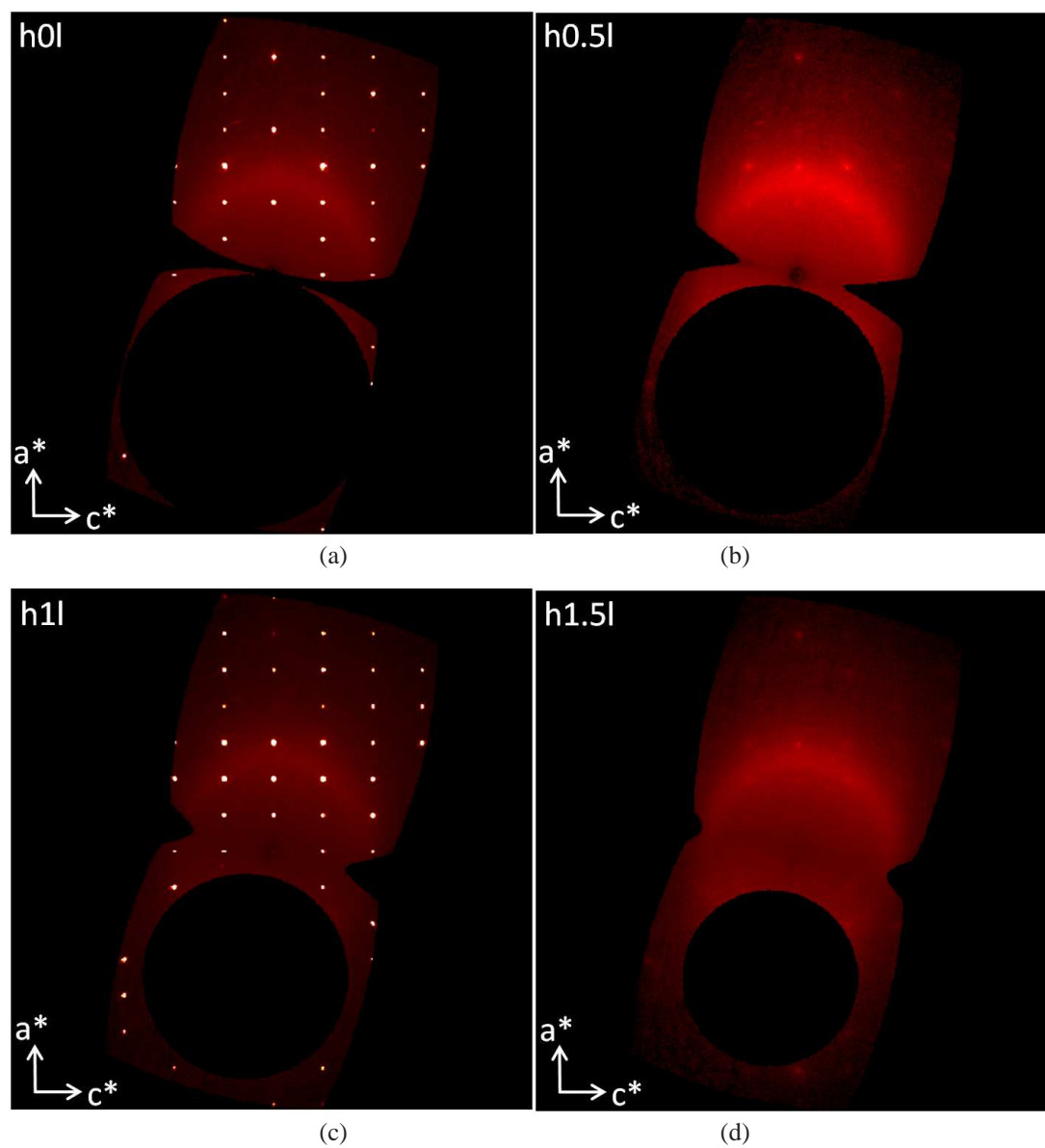


Figure 3
Observed reciprocal space reconstructions down b prior to drying (a) $h0l$ (b) $h0.5l$ (c) $h1l$ (d) $h1.5l$

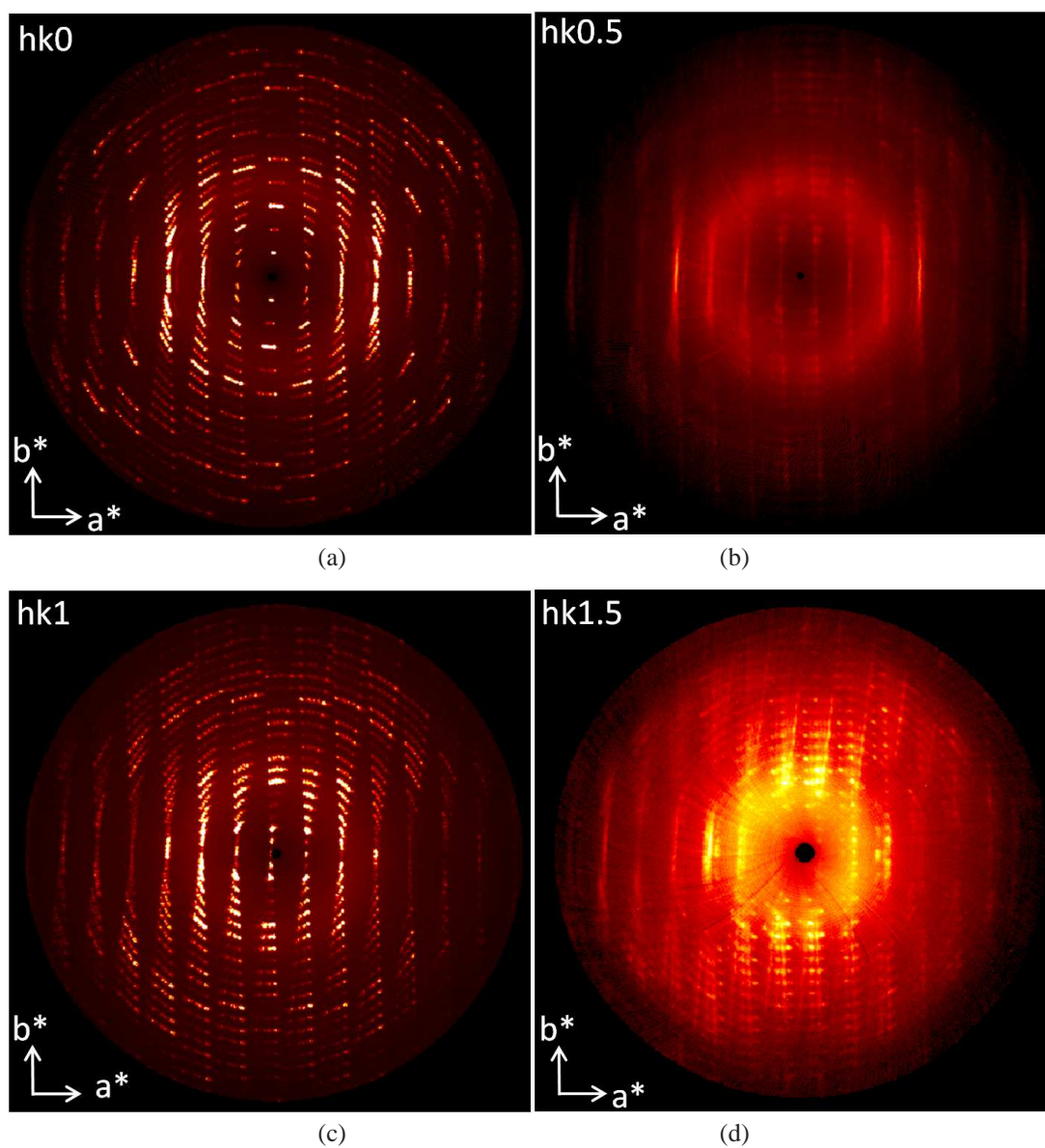


Figure 4
Observed reciprocal space reconstructions down c after drying the crystal (a) $hk0$ (b) $hk0.5$ (c) $hk1$ (d) $hk1.5$

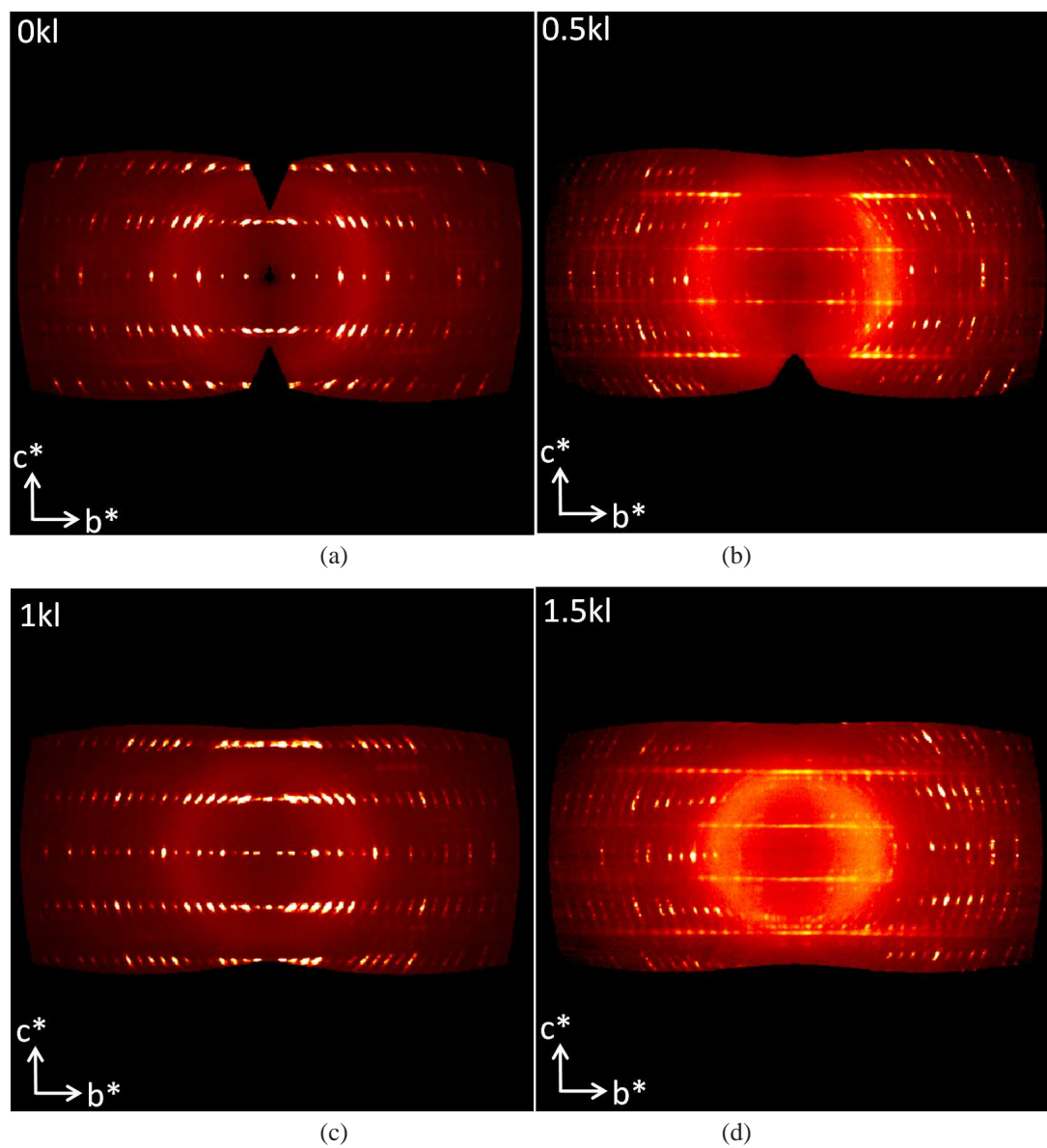


Figure 5

Observed reciprocal space reconstructions down a after drying the crystal (a) $0kl$ (b) $0.5kl$ (c) $1kl$ (d) $1.5kl$

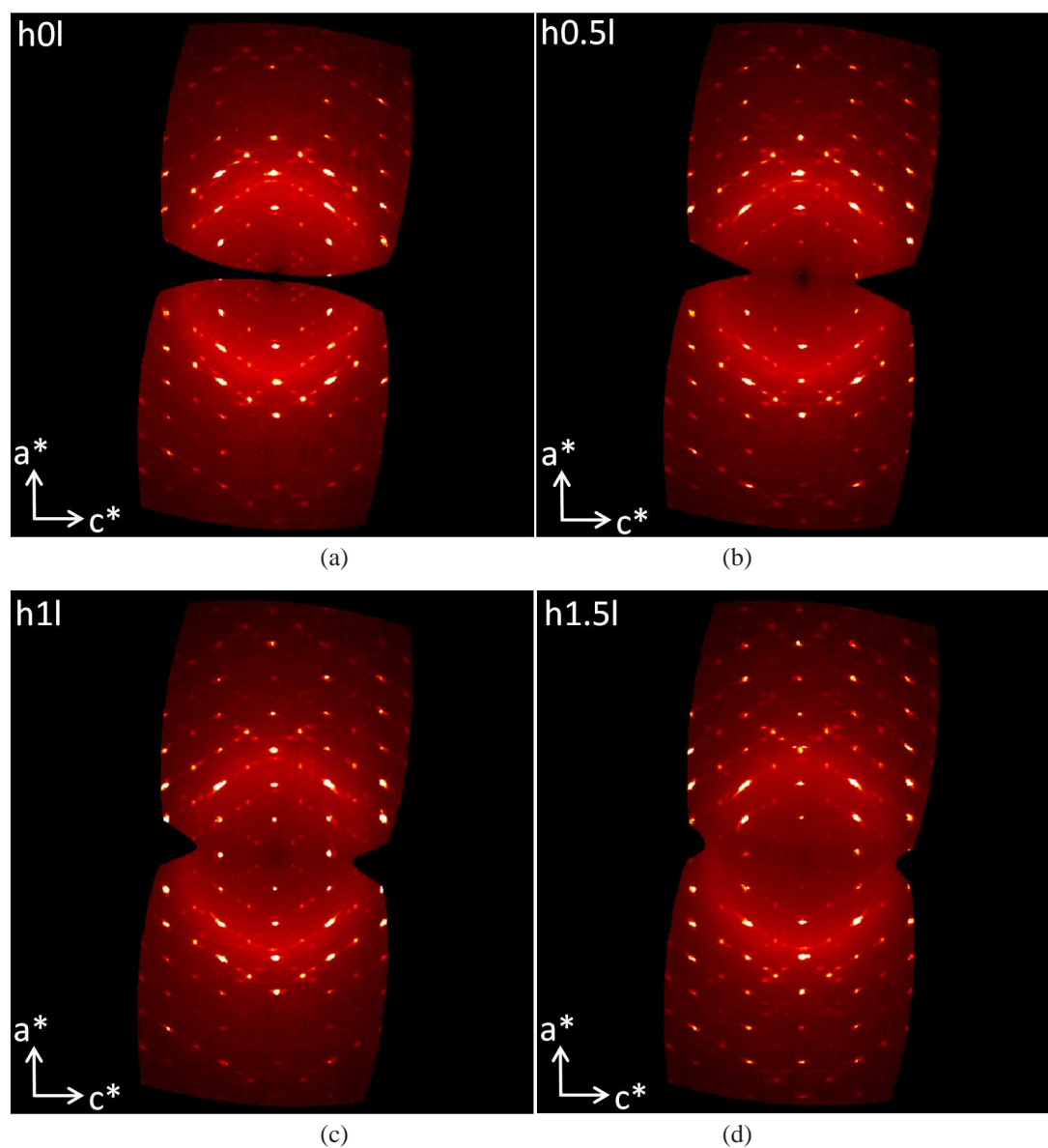
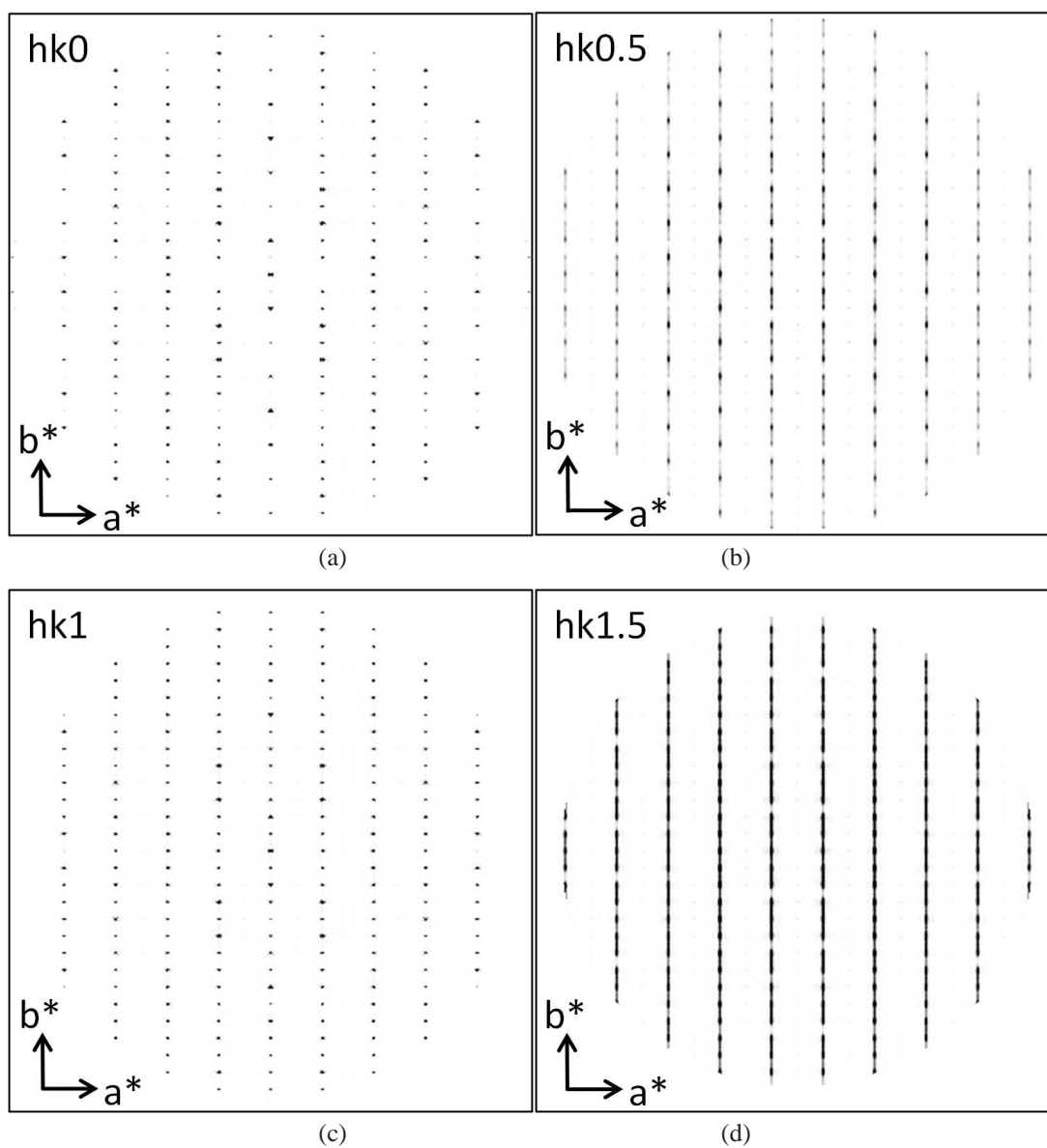


Figure 6

Observed reciprocal space reconstructions down b after drying the crystal (a) $h0l$ (b) $h0.5l$ (c) $h1l$ (d) $h1.5l$

**Figure 7**

Calculated reciprocal space sections (down c) from the final model as described in the text (a) $hk0$ (b) $hk0.5$ (c) $hk1$ (d) $hk1.5$

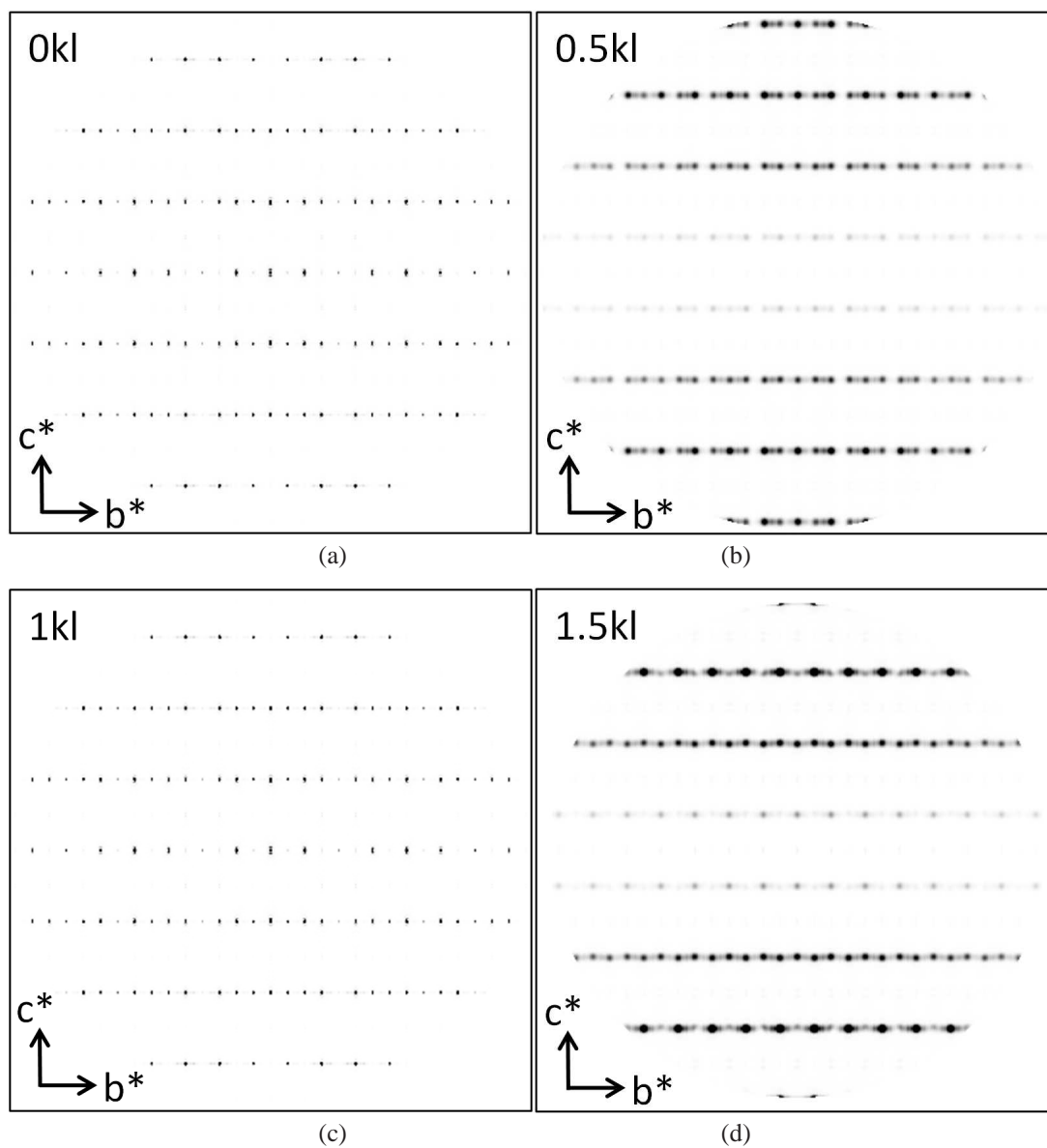


Figure 8

Calculated reciprocal space sections (down a) from the final model as described in the text (a) $0kl$ (b) $0.5kl$ (c) $1kl$ (d) $1.5kl$

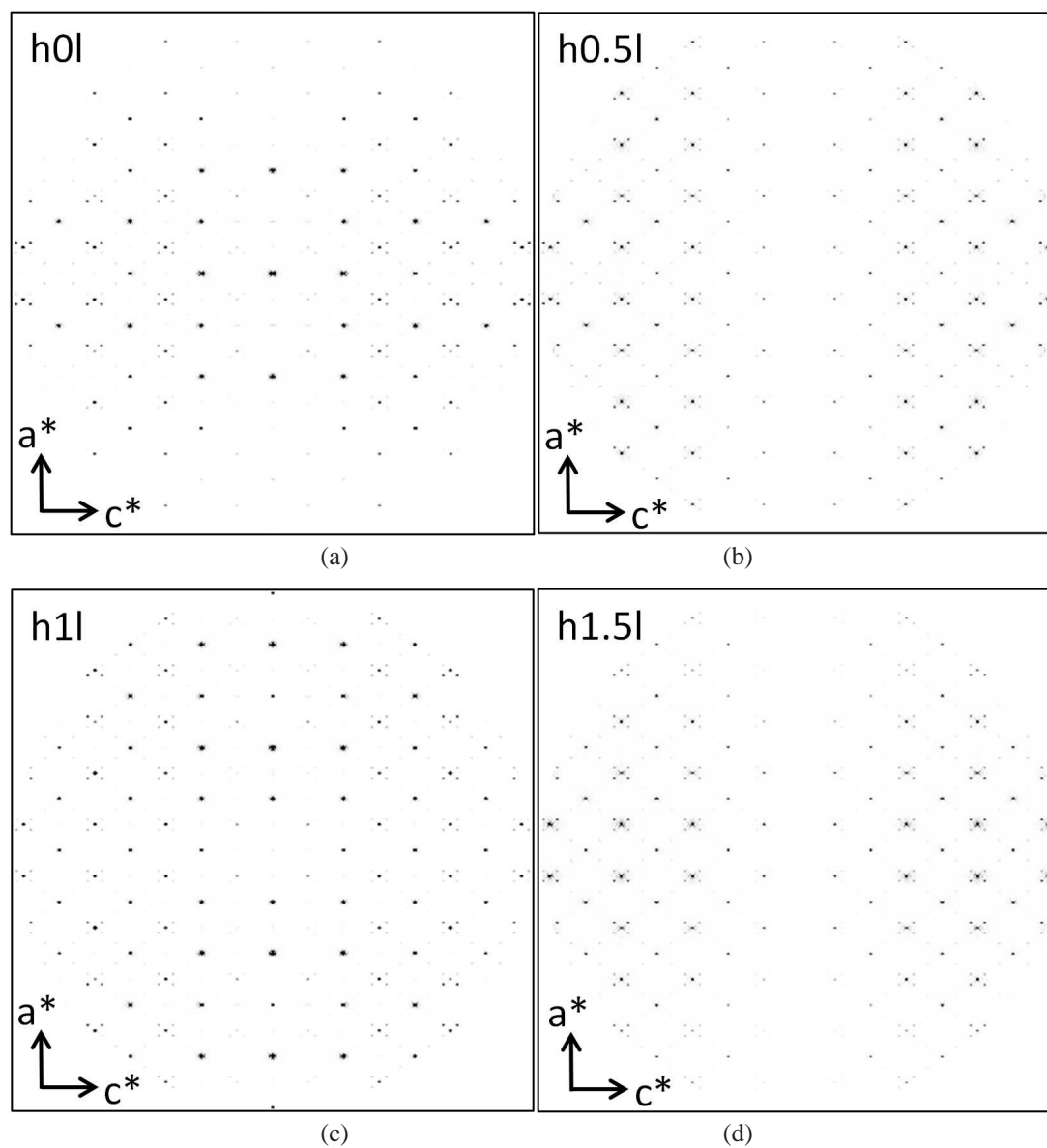


Figure 9

Calculated reciprocal space sections (down b) from the final model as described in the text. $h0.5l$ and $h1.5l$ have intensity scaled with the other images for clarity. (a) $h0l$ (b) $h0.5l$ (c) $h1l$ (d) $h1.5l$

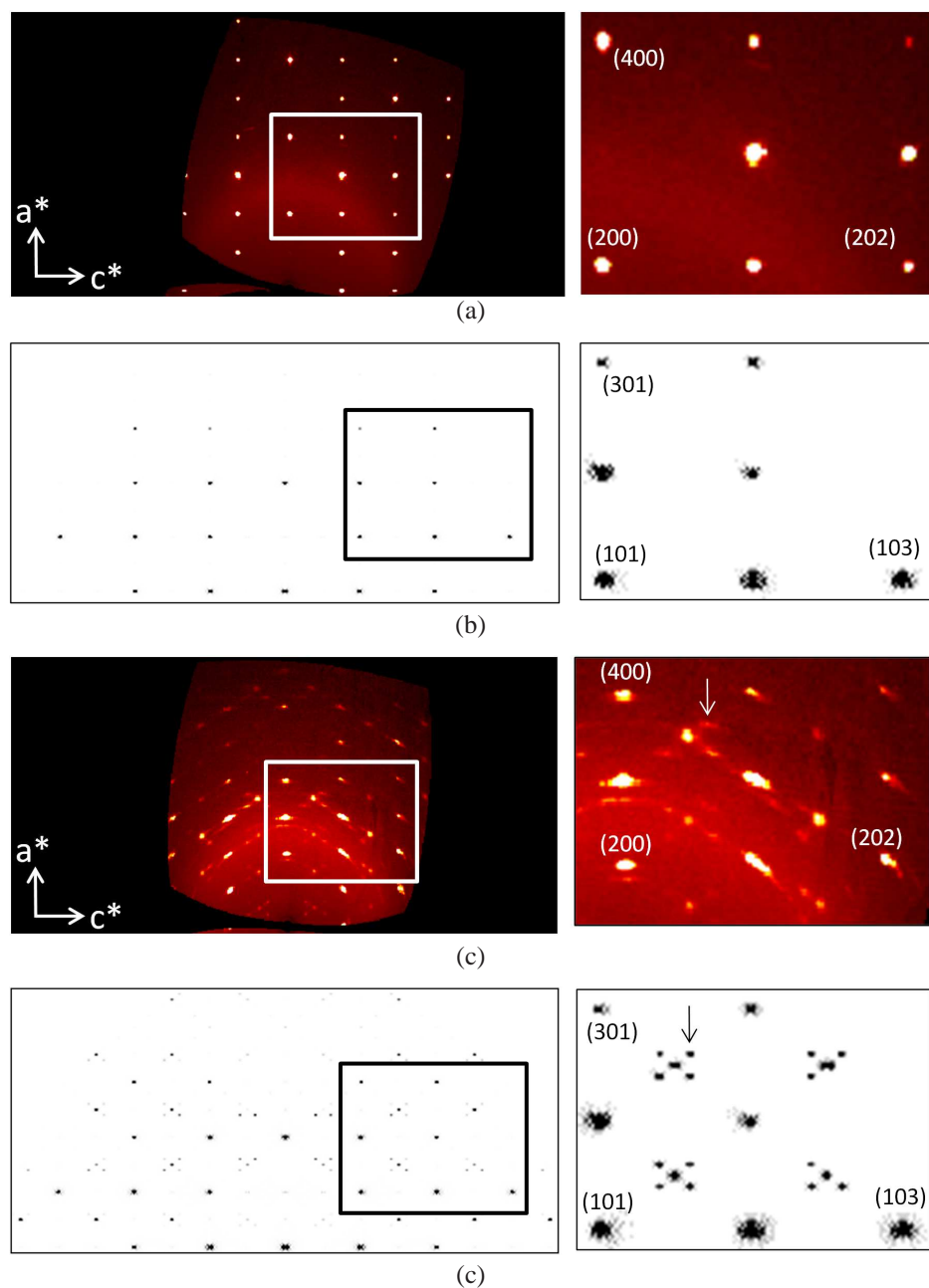
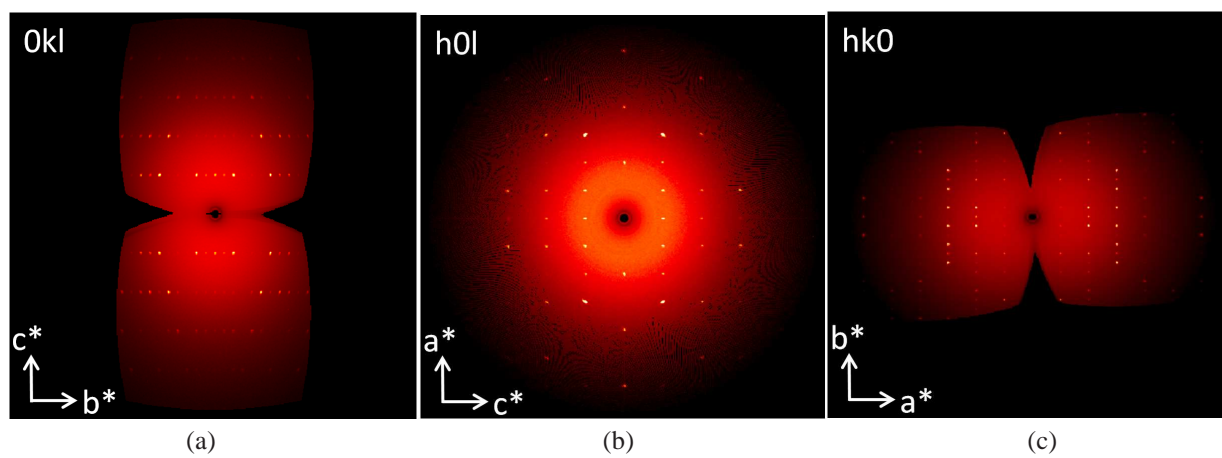


Figure 10

Observed and calculated $h0l$ sections depicting the $(h - 1, 0, l + 1)$ offset used for the zoom box in the calculated section. (a) and (b) are the respective observed and calculated upper hemisphere prior to drying. (c) and (d) are the corresponding hemispheres after drying. Given that two wave-vector modulations exist, the satellite indicated by the white arrow is at position $(4\ 0\ 1\ -1\ 0)$ with the satellite indicated by the black arrow at position $(3\ 0\ 2\ -1\ 0)$.

**Figure 11**

Calculated precession images from a small fragment broken from the bigger, now de-solvated, crystal. Smaller fragments are still the parent hemi-sulfate dihydrate structure. Cell parameters are $a = 10.83(1)$, $b = 32.98(4)$, $c = 7.88(1)$, $\alpha = \beta = \gamma = 90.0$ taken from the .p4p file. (a) $0kl$ (b) $h0l$ (c) $hk0$.