Background: Quite separately from the machinery of photosynthesis, the effects of light on plant development (germination, de-etiolation, shade avoidance, flowering) represent the most radical environmental effects on morphogenesis known in nature. Most of these effects are regulated by phytochrome, a family red/far-red photochromic biliproteins regulating the transcription of about 20% of all plant genes. How this is achieved is still far from being understood, but involves the assembly of a molecular complex in the nucleus involving phytochrome in the light-activated Pfr state, certain kinases and PIF transcription factors. Structural information is essential for progress in this field.
Results: We tested about 30 native crystals from 2 different *E. coli* constructs expressing fragments of phytochrome B from *Sorghum bicolor*. Several crystals of the smaller fragment diffracted to 1.7-2 Å, so we were able to collect several excellent datasets at different radiation doses and using helical mode. On the other hand, we urgently need to solve the structure of the larger fragment (having been unable to take any diffraction measurements at BESSY during 2 recent visits) and had hoped to be able to collect an appropriated dataset at ESRF. Unfortunately, however, these crystals diffracted poorly, the best only to 4 Å.
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