



Fig. 1S. Images of effective quantum yield of PSII (Φ_{PSII}) in intact and detached roots of various *Arabidopsis* lines. For the detached root sample, roots were excised from 21-d-old seedlings and grown for 7 d, whereas for the intact root control, shoots of 28-d-old seedlings were removed immediately before experiments. Data were obtained from the samples exposed to actinic light ($110 \mu\text{mol photons m}^{-2} \text{s}^{-1}$) for 10 min. The color scale represents the Φ_{PSII} value ranged from 0 (red) to 0.6 (purple). Bar = 1.0 cm.