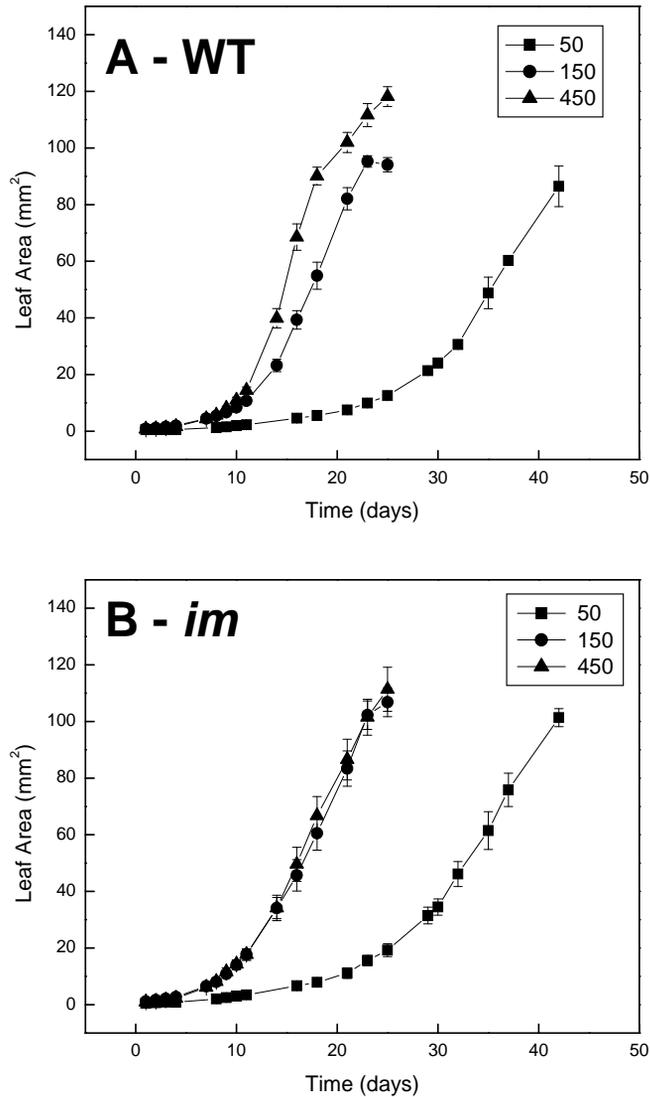
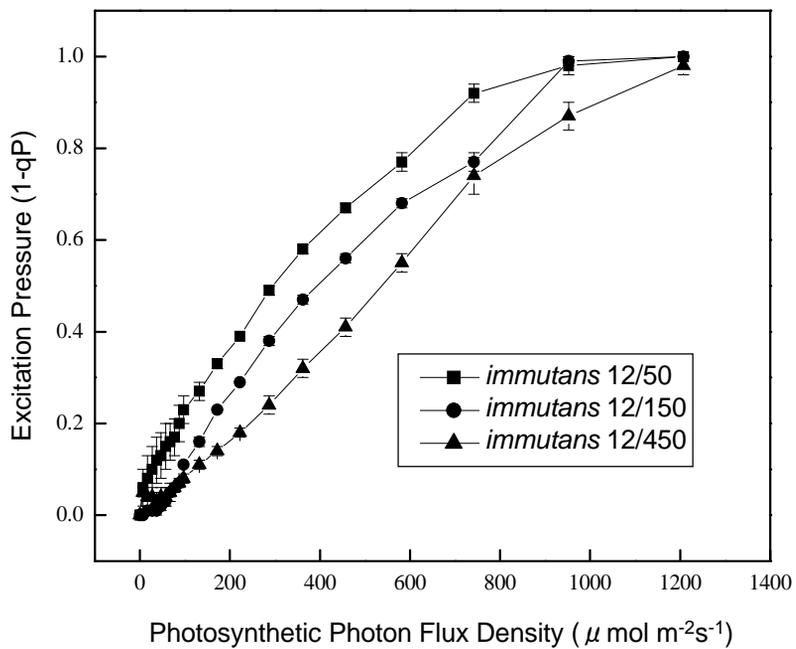


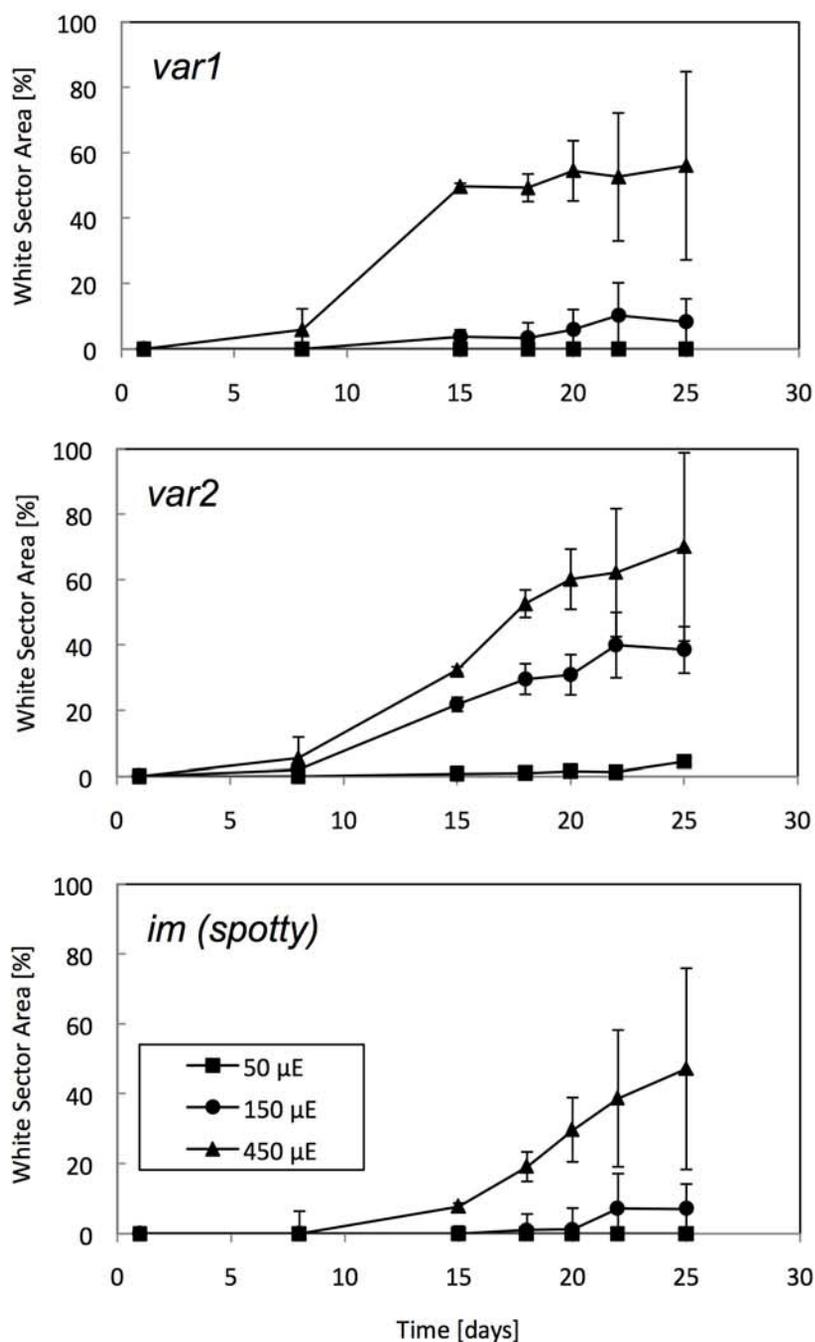
Supplemental Data. Rosso et al. (2009) Photosynthetic redox imbalance governs leaf sectoring in the *Arabidopsis thaliana* variegation mutants: *immutans*, *spotty*, *var1* and *var2*.



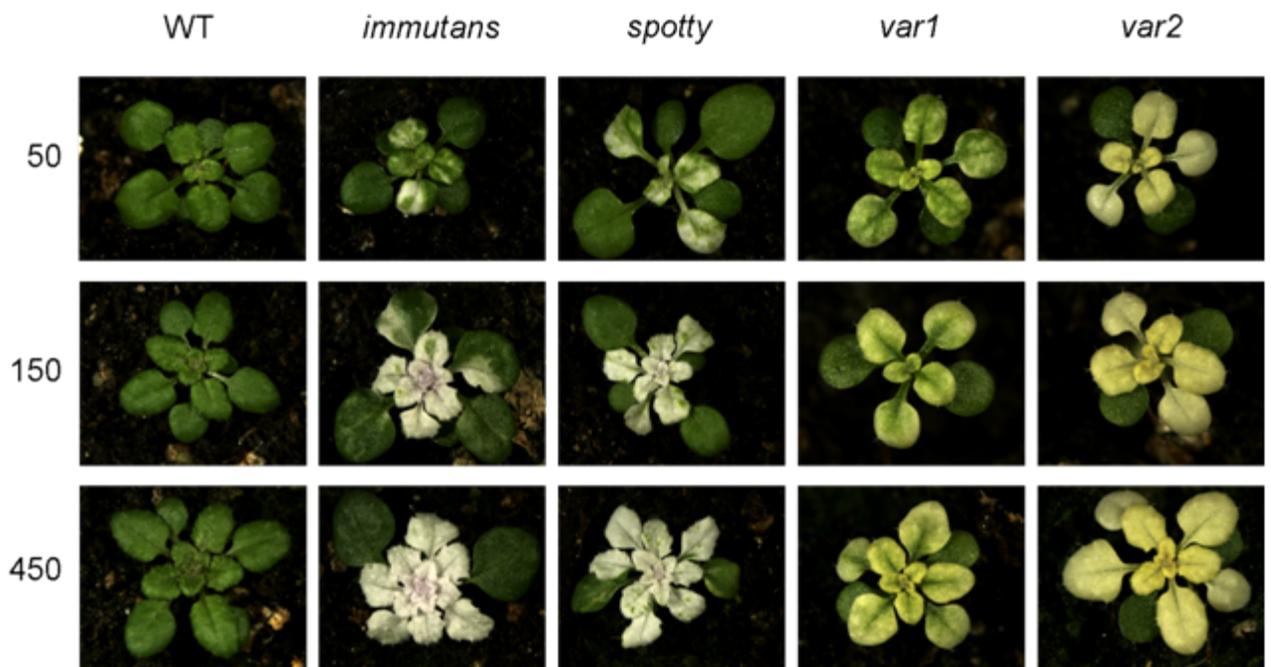
**Supplemental Figure 1.** Growth kinetics of WT and *im* seedlings of *Arabidopsis thaliana*. Seedlings were grown under a short day (8h) photoperiod at 25°C and an irradiance of either 50, 150 or 450  $\mu$  mol photons m<sup>-2</sup> s<sup>-1</sup>.



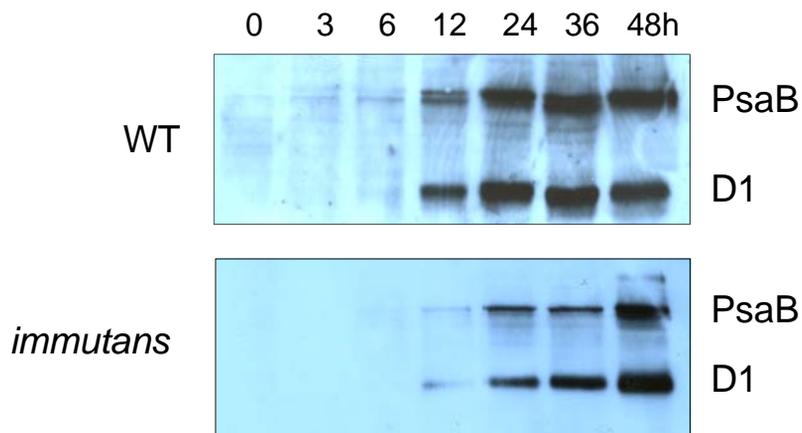
**Supplemental Figure 2.** The effect of growth irradiance on the light response curves for excitation pressure for *im* plants. Seedlings were grown under a short day photoperiod (8h) at 12°C and an irradiance of either 50, 150 or 450  $\mu\text{ mol photons m}^{-2}\text{ s}^{-1}$ . Excitation pressure was measured at the growth temperature.



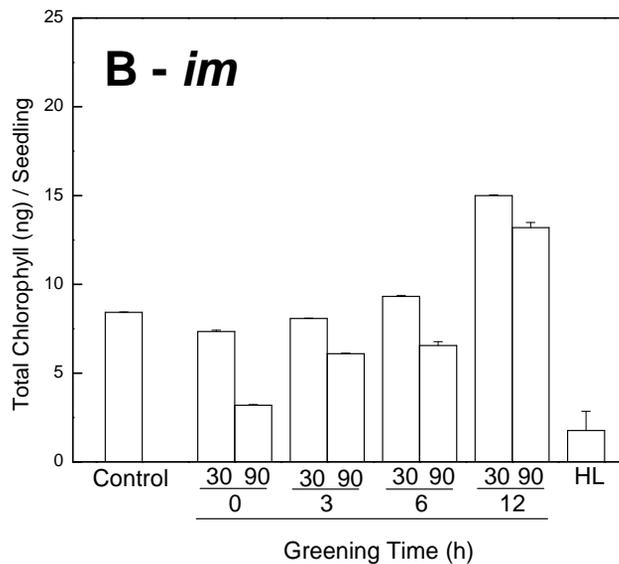
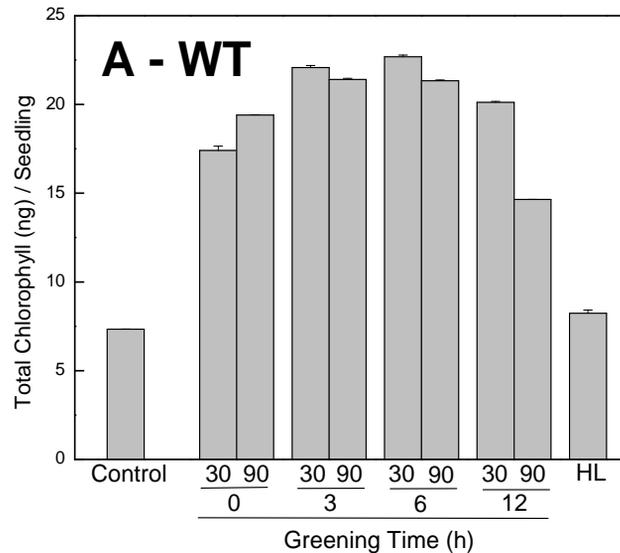
**Supplemental Figure 3.** Extent of variegation of the *var1*, *var2*, and *im (spotty)* mutants of *Arabidopsis thaliana*. Mutant seedlings were grown under a short day (8h) photoperiod at 25°C and an irradiance of either 50, 150 or 450  $\mu\text{ mol photons m}^{-2} \text{ s}^{-1}$ . The extent of variegation was quantified as the per cent of white sector area as described in Materials and Methods.



**Supplemental Figure 4.** Representative photographs of WT, *im*, *spotty*, *var1* and *var2* seedlings. All seedlings were grown under short day conditions (8h light/16 h dark) at 12°C and an irradiance of either 50, 150 or 450  $\mu$  mol photons  $m^{-2} s^{-1}$ .



**Supplemental Figure 5.** Biogenesis of photosystem II and photosystem I reaction centers. Dark grown WT and *im* cotyledons were exposed to greening at 25°C and a continuous irradiance of 150  $\mu$  mol photons  $m^{-2} s^{-1}$  for 0 to 48h as described for Figure 9C. SDS-PAGE was performed as described in Materials and Methods and gels were probed by immunoblotting for the presence of the PSI reaction center polypeptide, PsaB, and the PSII reaction center polypeptide, D1.



**Supplemental Figure 6.** The effects of a HL pulse on the greening of WT and *im* cotyledons. Greening of dark grown cotyledons was as described for Figure 11. After exposure to greening under continuous low light (LL,  $15 \mu\text{mol photons m}^{-2} \text{s}^{-1}$ ) for either 0, 3, 6 or 12h, cotyledons were exposed to a pulse of high light ( $700 \mu\text{mol photons m}^{-2} \text{s}^{-1}$ ) for a duration of either 30 or 90 min. After exposure to the high light pulse, cotyledons were allowed to complete their greening regime under continuous LL such that the total greening time was 24h. Controls were exposed to greening under continuous LL for 24h. HL represent cotyledons exposed to greening under continuous high light for 24h.