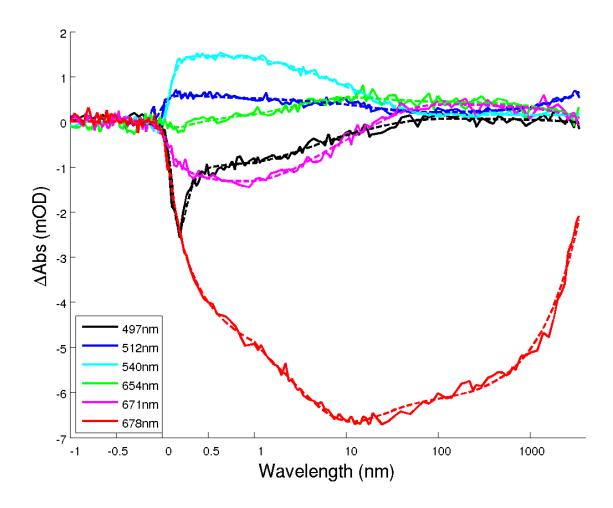
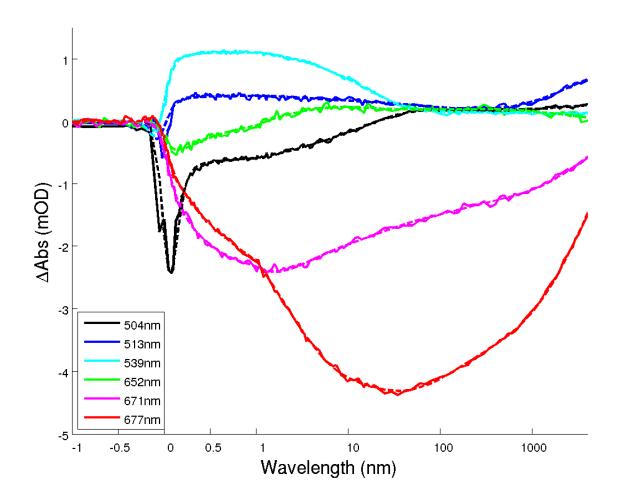
## **Supporting Information**

Minor complexes at work: light-harvesting by Carotenoids in the Photosystem II antenna complexes CP24 and CP26

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FIGURE~S1.~Pump~probe~traces~(solid)~and~fit~(dashed)~of~CP26~probed~at~selected~wavelengths~as~indicated~in~the~legend.



FIGURE~S2.~Pump~probe~traces~(solid)~and~fit~(dashed)~of~CP24~probed~at~selected~wavelengths~as~indicated~in~the~legend.

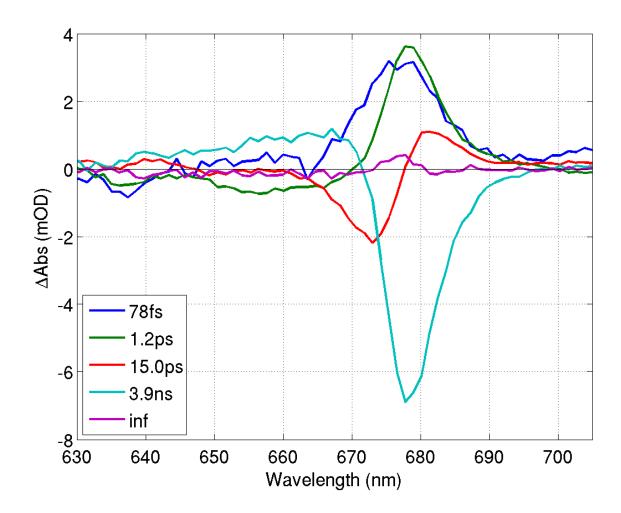


FIGURE S3. Decay Associated Difference Spectra (DADS) of CP26 excited at 506 nm. The DADS are the plots associated to the exponential decays. Each DADS shows the decayed (negative) and gained (positive) signal in its corresponding transition.

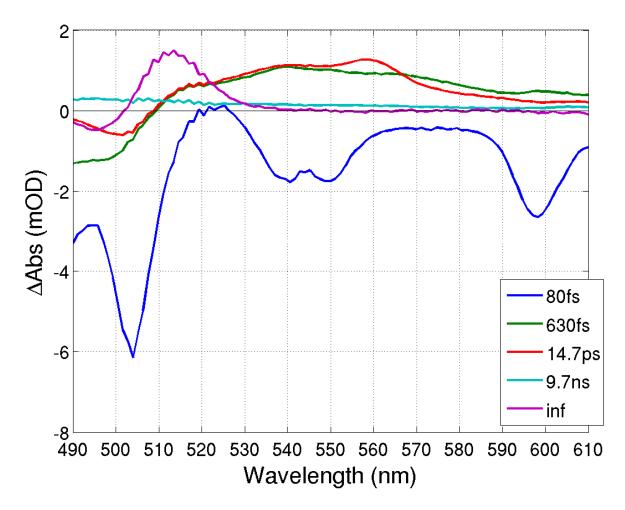


FIGURE S4: Global analysis results (EADS and connecting lifetimes) of the pump-probe measurements on CP26 at 77K after 506 nm excitation. Only the 490-610 nm part of the spectrum was included in the fit.

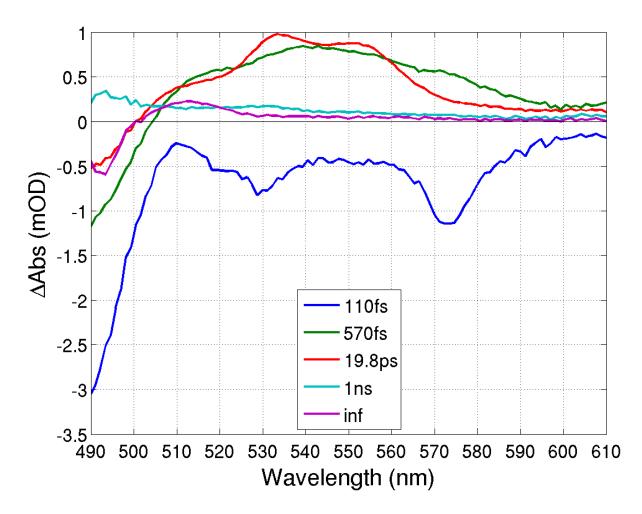


FIGURE S5: Global analysis results (EADS and connecting lifetimes) of the pump-probe measurements on CP24 at 77K after 490 nm excitation. Only the 490-610 nm part of the spectrum was included in the fit.