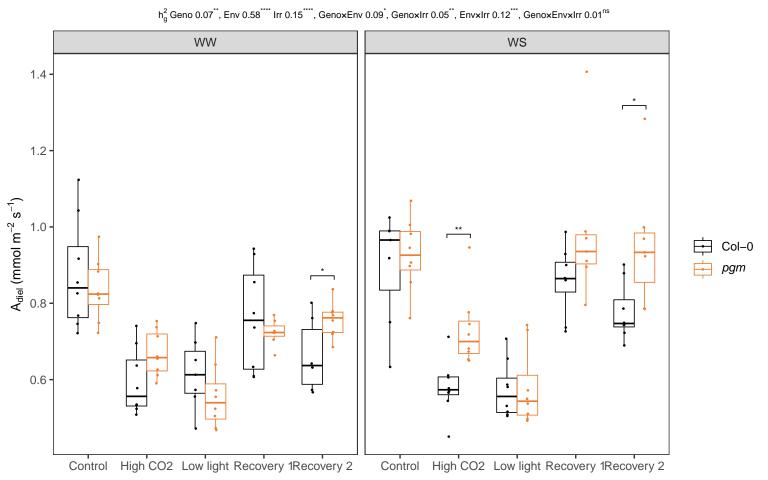
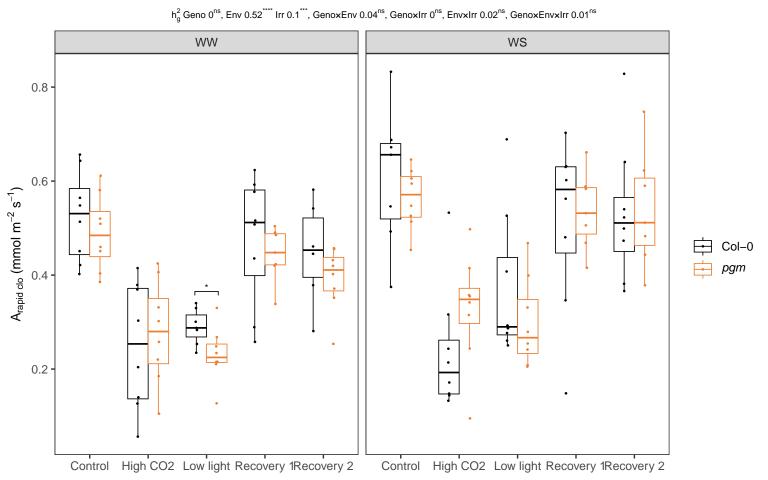
$h_{q}^{2}$  Geno 0.1 Fiv 0.35 Fir  $0^{ns}$ , Geno×Env 0.01 Seno×Irr 0.14 Fiv., Env×Irr 0.03 Seno×Env×Irr 0.01 Seno×Env×Irr 0.01 Fig. 6 Geno×Env×Irr 0.01 Fig. 6 Geno×Env×Ir WW WS 1.8 - $E_{\rm day}$  (mmol m<sup>-2</sup> s<sup>-1</sup>) 1.5 -Col-0 pgm 1.2 -0.9 -Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

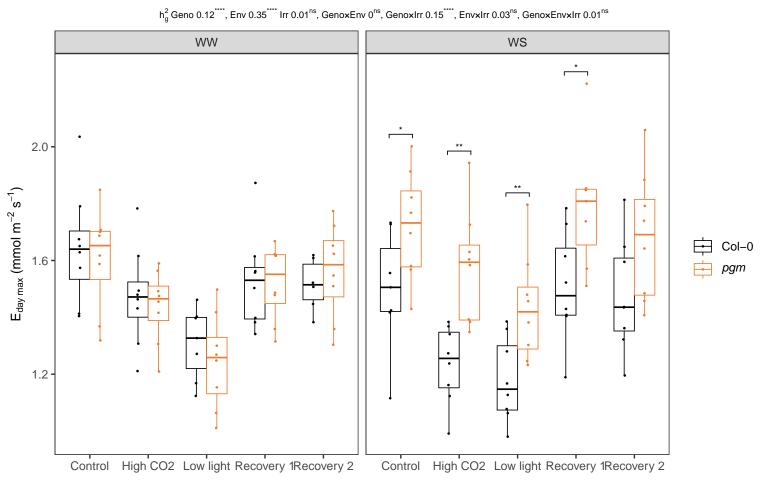
 $h_{g}^{2} \, \text{Geno} \, 0.04^{^{*}}, \, \text{Env} \, 0.06^{^{ns}} \, \text{Irr} \, 0.06^{^{**}}, \, \text{GenoxEnv} \, 0.02^{ns}, \, \text{GenoxIrr} \, 0.15^{^{****}}, \, \text{EnvxIrr} \, 0.05^{ns}, \, \text{GenoxEnvxIrr} \, 0.02^{ns}$ WW WS 1.0 - $E_{night}$  (mmol m $^{-2}$  s $^{-1}$ ) Col-0 0.8 pgm 0.6 -Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2

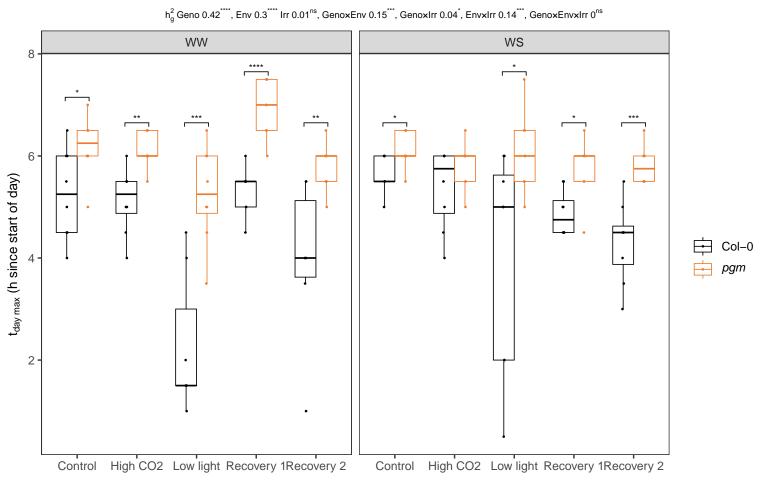
 $h_g^2\,\text{Geno}\,0.01^\text{ns},\,\text{Env}\,0.07^\text{ns}\,\text{Irr}\,0.04^\text{*},\,\text{GenoxEnv}\,0.03^\text{ns},\,\text{GenoxIrr}\,0.12^\text{****},\,\text{EnvxIrr}\,0.05^\text{ns},\,\text{GenoxEnvxIrr}\,0.01^\text{ns}$ WW WS 1.1 - $\rm E_{\rm end\ of\ night}\ (mmol\ m^{-2}\ s^{-1})$ 0.9 -Col-0 pgm 0.7 0.5 High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2 Control



 $h_0^2$  Geno  $0.06^{\circ\circ}$ , Env  $0.22^{\circ\circ\circ}$  Irr  $0.07^{\circ\circ}$ , GenoxEnv  $0.16^{\circ\circ\circ}$ , GenoxIrr  $0.03^{\circ}$ , EnvxIrr  $0.03^{ns}$ , GenoxEnvxIrr  $0.01^{ns}$ WW WS 0.8 -0.6 - $A_{rapid \, op} \, (mmol \, m^{-2} \, s^{-1})$ Col-0 0.4 pgm 0.2 -0.0 High CO2 Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control







 $h_{q}^{2}$  Geno 0.47 The first one of the converge of the co WW WS 1.0 - $\sigma_{day} \; (mmol \; m^{-2} \; s^{-1} \; d^{-1})$ 0.5 -Col-0 pgm 0.0 -0.5 Control High CO2 Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2

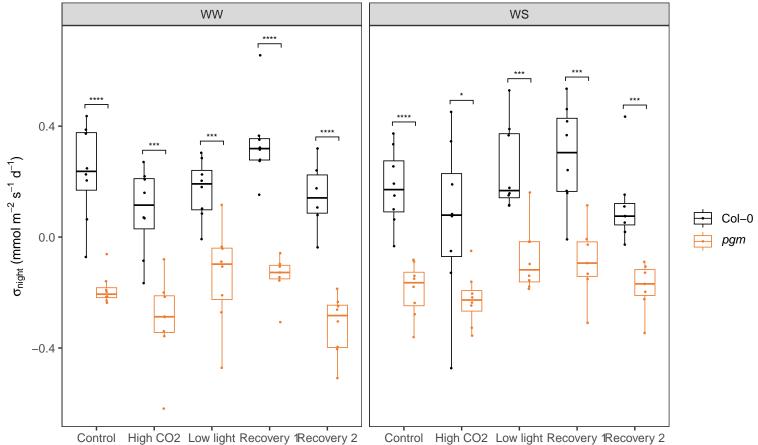
 $h_0^2$  Geno 0.34 ···· , Env 0.45 ···· Irr  $0^{ns}$  , GenoxEnv  $0.07^{ns}$  , GenoxIrr  $0.01^{ns}$  , EnvxIrr  $0.05^{ns}$  , GenoxEnvxIrr  $0.02^{ns}$ WWWS 20 - $\Delta_{\rm day}~({\rm mol}~{\rm m}^{-2})$ Col-0 pgm  $\rightleftharpoons$ Control High CO2 Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

 $h_{q}^{2}$  Geno 0.17 ..., Env 0.06 s Irr 0.03 s, Geno×Env 0.1 , Geno×Irr 0.11 , Env×Irr 0.12 , Geno×Env×Irr 0.02 s WW WS 6 - $\Sigma_{\rm preclo}~({
m mol}~{
m m}^{-2})$ Col-0 pgm 2 -Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

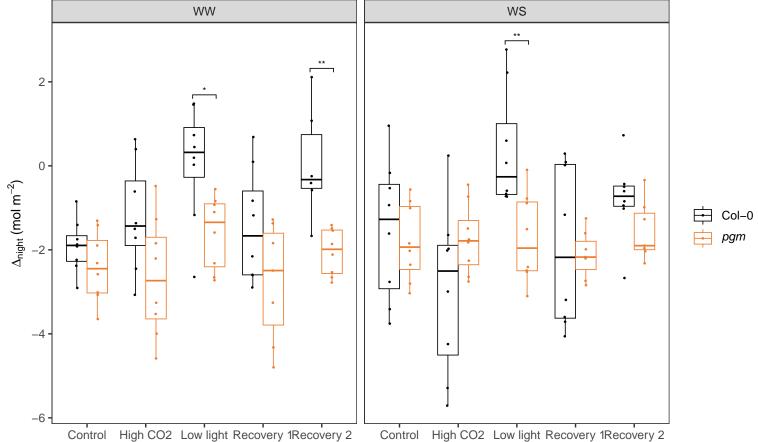
 $h_{g}^{2}\,\text{Geno }0.1^{""},\,\text{Env }0.06^{\text{ns}}\,\text{Irr }0.06^{"},\,\text{GenoxEnv }0.03^{\text{ns}},\,\text{GenoxIrr }0.18^{""},\,\text{EnvxIrr }0.04^{\text{ns}},\,\text{GenoxEnvxIrr }0.03^{\text{ns}}$ WW WS 1.0 - $E_{\text{night min}} \; (\text{mmol m}^{-2} \; \text{s}^{-1})$ 0.8 -Col-0 pgm 0.6 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2

 $h_{\sigma}^{2}$  Geno 0.71 <sup>\*\*\*\*</sup>, Env 0.19 <sup>\*\*\*\*</sup> Irr  $0^{ns}$ , GenoxEnv 0.09 <sup>\*\*</sup>, GenoxIrr  $0^{ns}$ , EnvxIrr 0.01 <sup>ns</sup>, GenoxEnvxIrr 0.03 <sup>ns</sup>  $\mathsf{WW}$ WS 12.5 -10.0 t<sub>night min</sub> (h since start of night) \*\*\*\* 7.5 -Col-0 pgm 5.0 2.5 0.0 -High CO2 Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control

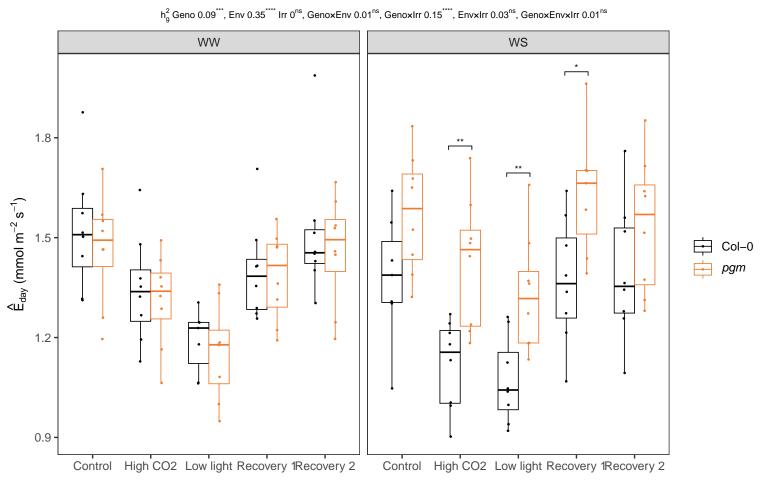
 $h_g^2$  Geno 0.65  $\stackrel{\dots}{\dots}$ , Env 0.21  $\stackrel{\dots}{\dots}$  Irr 0.01  $\stackrel{\text{ns}}{\dots}$ , Geno×Env 0.02  $\stackrel{\text{ns}}{\dots}$ , Geno×Irr 0.02  $\stackrel{\text{ns}}{\dots}$ , Env×Irr 0.02  $\stackrel{\text{ns}}{\dots}$ , Geno×Env×Irr 0.01  $\stackrel{\text{ns}}{\dots}$ 



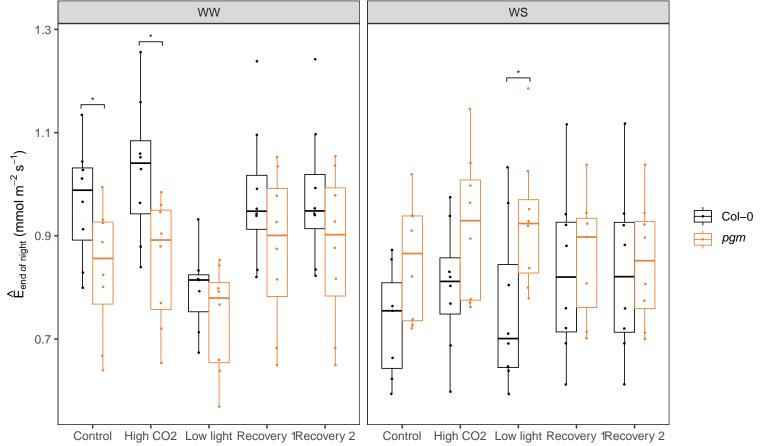
h<sub>g</sub><sup>2</sup> Geno 0.14<sup>\*\*\*\*</sup>, Env 0.2<sup>\*\*\*\*</sup> Irr 0<sup>ns</sup>, Geno×Env 0.08<sup>\*</sup>, Geno×Irr 0.04<sup>\*</sup>, Env×Irr 0.02<sup>ns</sup>, Geno×Env×Irr 0.05<sup>ns</sup>



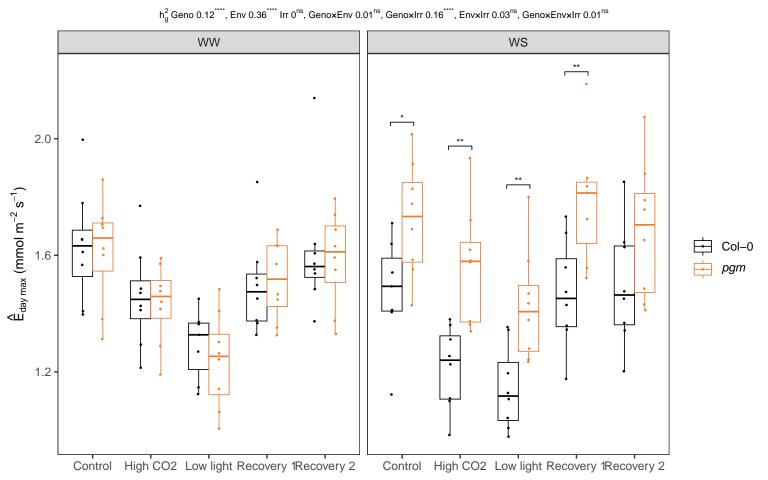
 $h_{\sigma}^{2}$  Geno 0.53 \*\*\*\*, Env 0.14 \*\*\* Irr  $0^{ns}$ , GenoxEnv 0.04 \*\*\*, GenoxIrr  $0^{ns}$ , EnvxIrr 0.02 \*\*\*, GenoxEnvxIrr 0.01 \*\*\* WW WS 6 - $\Sigma_{\rm preop}~({
m mol}~{
m m}^{-2})$ Col-0 pgm 2 -0 -Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2

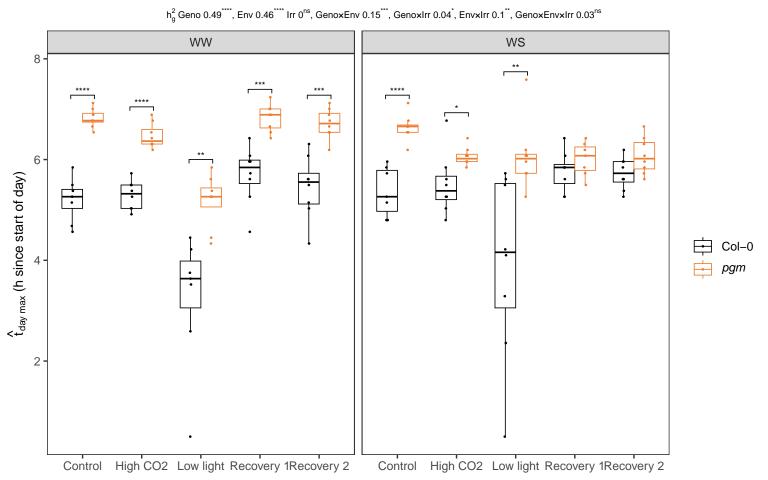


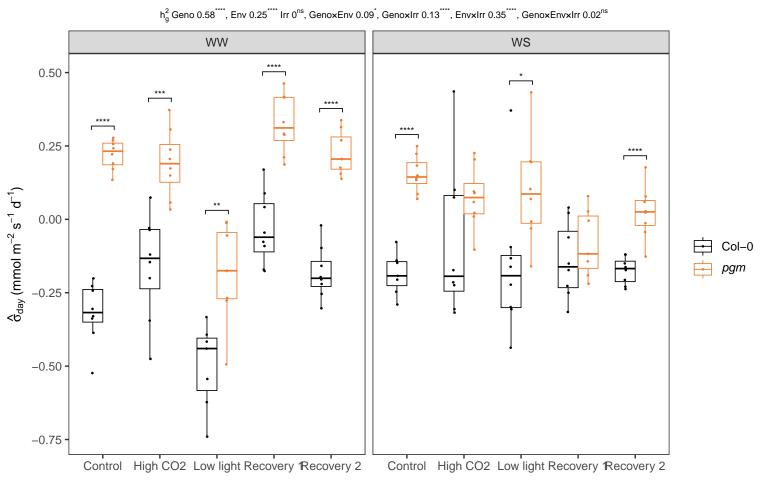
 $h_{q}^{2}$  Geno 0.04\*, Env 0.06<sup>ns</sup> Irr 0.06\*\*, GenoxEnv 0.02<sup>ns</sup>, GenoxIrr 0.14\*\*\*\*, EnvxIrr 0.06<sup>ns</sup>, GenoxEnvxIrr 0.02<sup>ns</sup> WW WS 1.0 - $\hat{\mathsf{E}}_{\mathsf{night}}$  (mmol m $^{-2}$  s $^{-1}$ ) Col-0 pgm 0.8 0.6 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2



 $h_0^2$  Geno 0.14 , Env 0.61 Irr 0.1 , GenoxEnv 0.07 , GenoxIrr 0.07 , EnvxIrr 0.12 , GenoxEnvxIrr 0.01 , GenoxEnvxIrr 0.01 , GenoxEnvxIrr 0.01 WW WS 1.2 - $A_{diel}$  (mmol m<sup>-2</sup> s<sup>-1</sup>) Col-0 0.9 pgm 0.6 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2







 $h_{q}^{2} \; \mathsf{Geno} \; 0.45^{""}, \; \mathsf{Env} \; 0.43^{""} \; \mathsf{Irr} \; 0.02^{\mathsf{ns}}, \; \mathsf{Geno} \times \mathsf{Env} \; 0.02^{\mathsf{ns}}, \; \mathsf{Geno} \times \mathsf{Irr} \; 0.02^{\mathsf{ns}}, \; \mathsf{Geno} \times \mathsf{Env} \times \mathsf{Irr} \; 0.02^{\mathsf{ns}}, \; \mathsf{Env} \times$ WW ${\sf WS}$ 10 - $\mathring{\Delta}_{\text{day}} \; (\text{mol m}^{-2})$ Col-0 pgm 0 -

Control

High CO2 Low light Recovery 1Recovery 2

Control

High CO2 Low light Recovery 1Recovery 2

 $h_{g}^{2} \: \mathsf{Geno} \: 0.09^{\texttt{...}}, \: \mathsf{Env} \: 0.01^{\mathsf{ns}} \: \mathsf{Irr} \: 0^{\mathsf{ns}}, \: \mathsf{GenoxEnv} \: 0.08^{\overset{\texttt{.}}{\bullet}}, \: \mathsf{GenoxIrr} \: 0.2^{\overset{\texttt{....}}{\dots}}, \: \mathsf{EnvxIrr} \: 0.21^{\overset{\texttt{....}}{\dots}}, \: \mathsf{GenoxEnvxIrr} \: 0.01^{\mathsf{ns}}$ WW WS 5 -4 - $\hat{\Sigma}_{\rm preclo}$  (mol m $^{-2}$ ) Col-0 pgm 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

 $h_0^2$  Geno  $0.05^{**}$ , Env  $0.06^{ns}$  Irr  $0.06^{**}$ , GenoxEnv  $0.04^{ns}$ , GenoxIrr  $0.16^{****}$ , EnvxIrr  $0.05^{ns}$ , GenoxEnvxIrr  $0.03^{ns}$ WW WS 1.0 - $\hat{E}_{night \, min} \, (mmol \, m^{-2} \, s^{-1})$ Col-0 0.8 pgm 0.6 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

 $h_0^2$  Geno  $0.78^{****}$ , Env  $0.1^{**}$  Irr  $0.01^{ns}$ , Geno×Env  $0.06^{ns}$ , Geno×Irr  $0.02^{ns}$ , Env×Irr  $0.05^{ns}$ , Geno×Env×Irr  $0.01^{ns}$  $\mathsf{WW}$ WS 10.0 t<sub>night min</sub> (h since start of night) 7.5 -Col-0 pgm 5.0 -2.5 Control High CO2 Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2

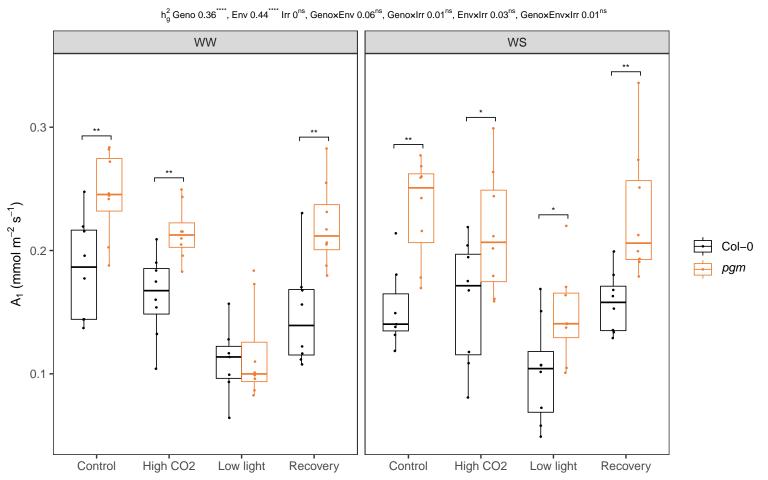
 $h_{q}^{2}$  Geno  $0.72^{****}$ , Env  $0.04^{ns}$  Irr  $0^{ns}$ , GenoxEnv  $0.08^{*}$ , GenoxIrr  $0.09^{***}$ , EnvxIrr  $0.08^{*}$ , GenoxEnvxIrr  $0.04^{ns}$ WW WS 0.6 -0.4 - $\delta_{night}$  (mmol m<sup>-2</sup> s<sup>-1</sup> d<sup>-1</sup>) 0.2 -Col-0 pgm 0.0 --0.2-0.4 **-**Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

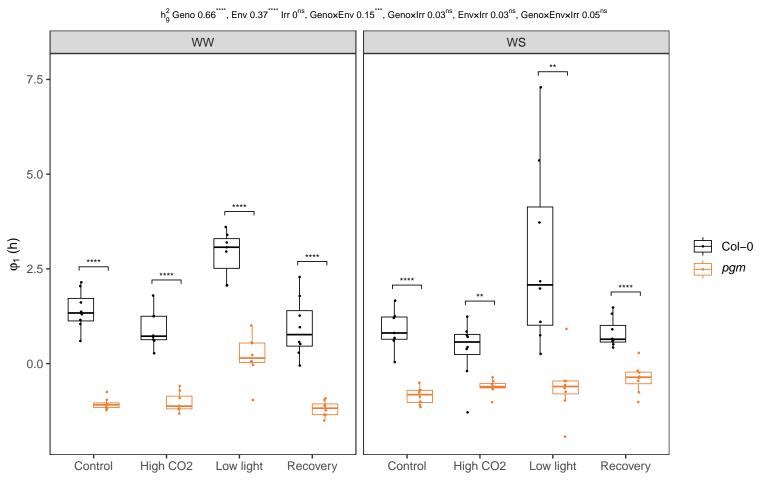
 $h_{q}^{2}$  Geno  $0.27^{****}$ , Env  $0.28^{****}$  Irr  $0^{ns}$ , Geno×Env  $0.02^{ns}$ , Geno×Irr  $0.03^{*}$ , Env×Irr  $0.02^{ns}$ , Geno×Env×Irr  $0.01^{ns}$  $\mathsf{WW}$ WS 1 -0  $\Delta_{\text{night}} \, (\text{mol m}^{-2})$ Col-0 -2 pgm -3 -4 High CO2 Low light Recovery 1Recovery 2 Control High CO2 Low light Recovery 1Recovery 2 Control

 $h_q^2 \, \text{Geno } 0.55^{****}, \, \text{Env } 0.03^{\text{ns}} \, \text{Irr } 0^{\text{ns}}, \, \text{GenoxEnv } 0.03^{\text{ns}}, \, \text{GenoxIrr } 0.01^{\text{ns}}, \, \text{EnvxIrr } 0.06^{\text{ns}}, \, \text{GenoxEnvxIrr } 0.03^{\text{ns}}, \, \text$ WW WS 6 - $\hat{\Sigma}_{\text{preop}}$  (mol m<sup>-2</sup>) Col-0 pgm \*\*\*\* 2 · 0 -Control High CO<sub>2</sub> Low light Recovery 1Recovery 2 Control High CO<sub>2</sub> Low light Recovery 1Recovery 2

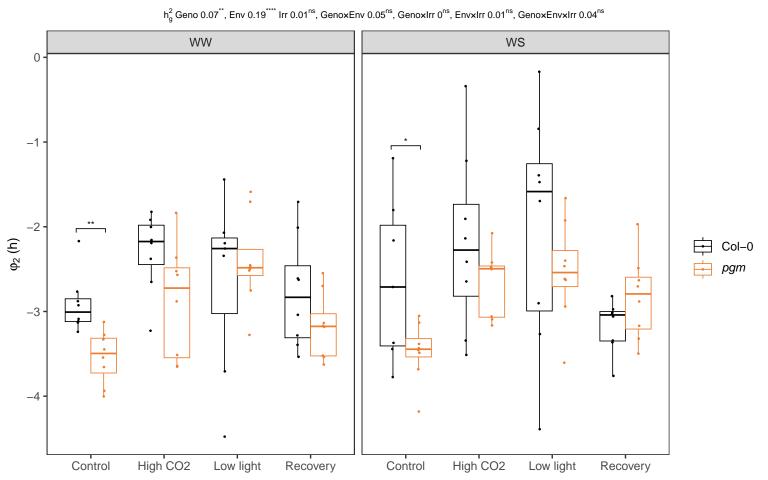
 $h_{\sigma}^{2}$  Geno 0.05°, Env 0.23° Irr 0<sup>ns</sup>, GenoxEnv 0.01<sup>ns</sup>, GenoxIrr 0.14° EnvxIrr 0.08°, GenoxEnvxIrr 0.01<sup>ns</sup> WW WS 1.6 1.4 -E<sub>mean</sub> (mmol m<sup>-2</sup> s<sup>-1</sup>) Col-0 pgm 0.8 -0.6 Control High CO2 Low light Recovery Control High CO2 Low light Recovery

 $h_0^2$  Geno 0.06", Env 0.48" Irr 0.08", GenoxEnv 0.05<sup>ns</sup>, GenoxIrr 0.01<sup>ns</sup>, EnvxIrr 0.02<sup>ns</sup>, GenoxEnvxIrr 0.01<sup>ns</sup> WW WS 0.3 - $A_{SQW}$  (mmol m<sup>-2</sup> s<sup>-1</sup>) 0.2 -Col-0 pgm 0.1 -0.0 -High CO2 Control High CO2 Low light Recovery Control Low light Recovery





 $h_{\alpha}^{2}$  Geno  $0.17^{****}$ , Env  $0.15^{***}$  Irr  $0.03^{ns}$ , GenoxEnv  $0.04^{ns}$ , GenoxIrr  $0.07^{**}$ , EnvxIrr  $0^{ns}$ , GenoxEnvxIrr  $0.01^{ns}$ WW WS 0.12 0.09 - $A_2 \text{ (mmol m}^{-2} \text{ s}^{-1}\text{)}$ Col-0 0.06 pgm 0.03 -0.00 High CO2 Control High CO2 Low light Recovery Control Low light Recovery



 $h_{\sigma}^{2}$  Geno  $0.37^{****}$ , Env  $0.42^{****}$  Irr  $0^{ns}$ , GenoxEnv  $0.06^{ns}$ , GenoxIrr  $0.03^{ns}$ , EnvxIrr  $0.02^{ns}$ , GenoxEnvxIrr  $0^{ns}$ WW WS 0.4 -A<sub>1</sub> + A<sub>2</sub> (mmol m<sup>-2</sup> s<sup>-1</sup>) = 5.0Col-0 pgm 0.1 -Control High CO2 Low light Recovery Control High CO2 Low light Recovery

