

# photobiologyPlants Version 0.3.0

## CRY related functions and data

Pedro J. Aphalo

April 14, 2015

### 1 Set up

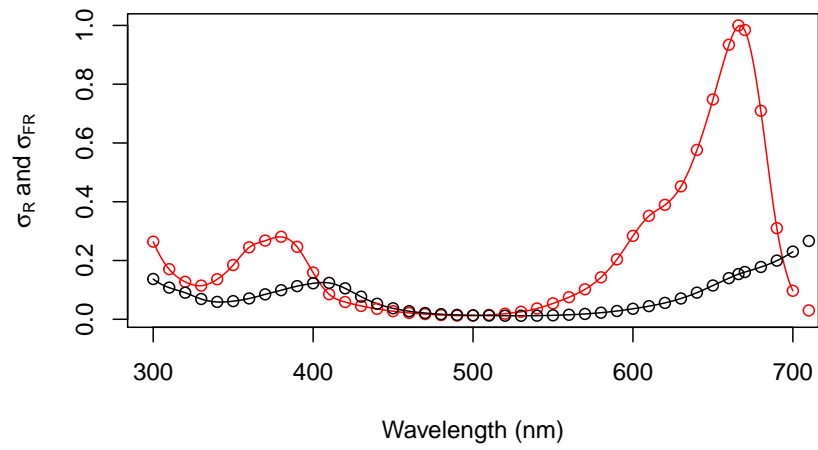
```
library(photobiologyPlants)
library(photobiologygg)
```

```
options(photobiology.filter.qty = "absorbance")
options(photobiology.plot.annotations =
  c("boxes", "labels", "colour.guide", "peaks", "title"))
options(photobiology.radiation.unit = "photon")
```

### 2 Phytochrome

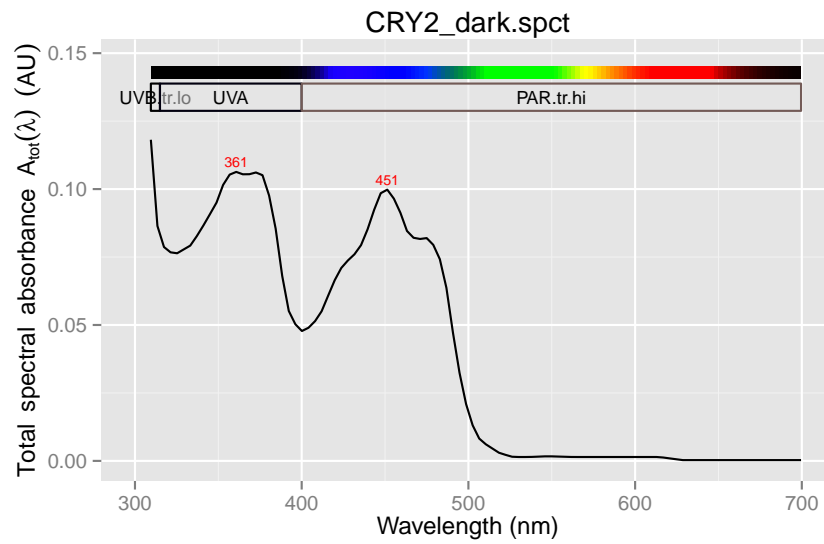
### 3 Test of interpolation

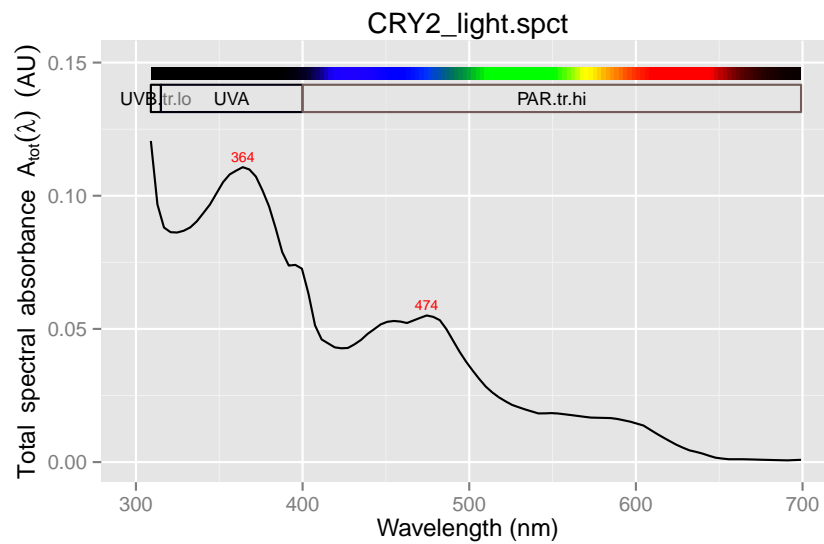
```
ex7.dt <- data.table(w.length=300:700,
  sigma.r = Phy_Sigma_R(300:700),
  sigma.fr = Phy_Sigma_FR(300:700),
  sigma = Phy_Sigma(300:700))
plot(I(sigma.r/ max(sigma.r)) ~ w.length, data=ex7.dt, type="l", col="red",
  xlab="Wavelength (nm)", ylab=expression(sigma[R]~and~sigma[FR]))
lines(I(sigma.fr/max(sigma.r)) ~ w.length, data=ex7.dt, col="black")
points(I(Sigma.R/max(Sigma.R)) ~ w.length, data=phytochrome.spct, col="red")
points(I(Sigma.FR/max(Sigma.R)) ~ w.length, data=phytochrome.spct, col="black")
rm(ex7.dt)
```



## 4 Cryptochromes

```
plot(CRY2_dark.spct)
plot(CRY2_light.spct)
```

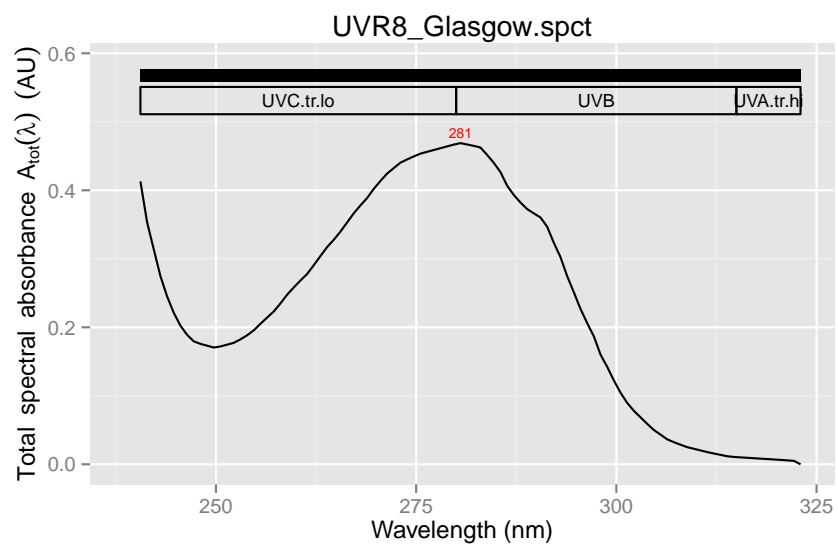
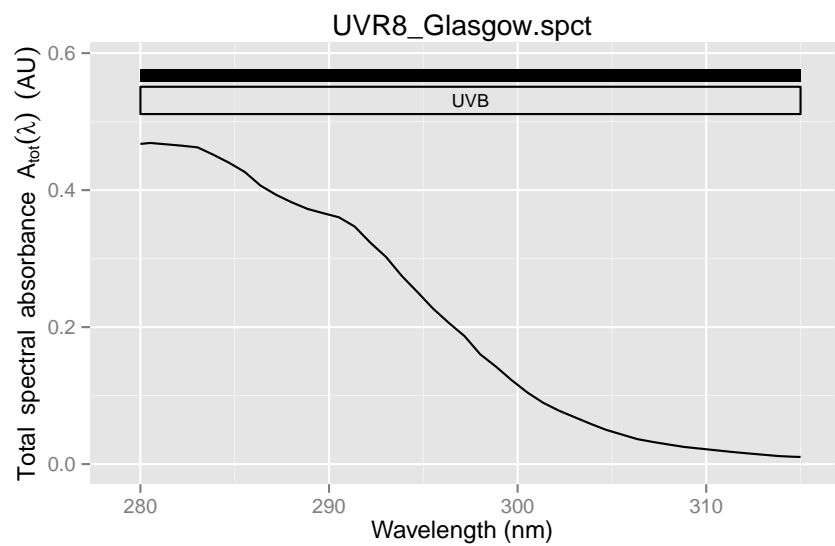




#### 4.1 UVR8 wavebands

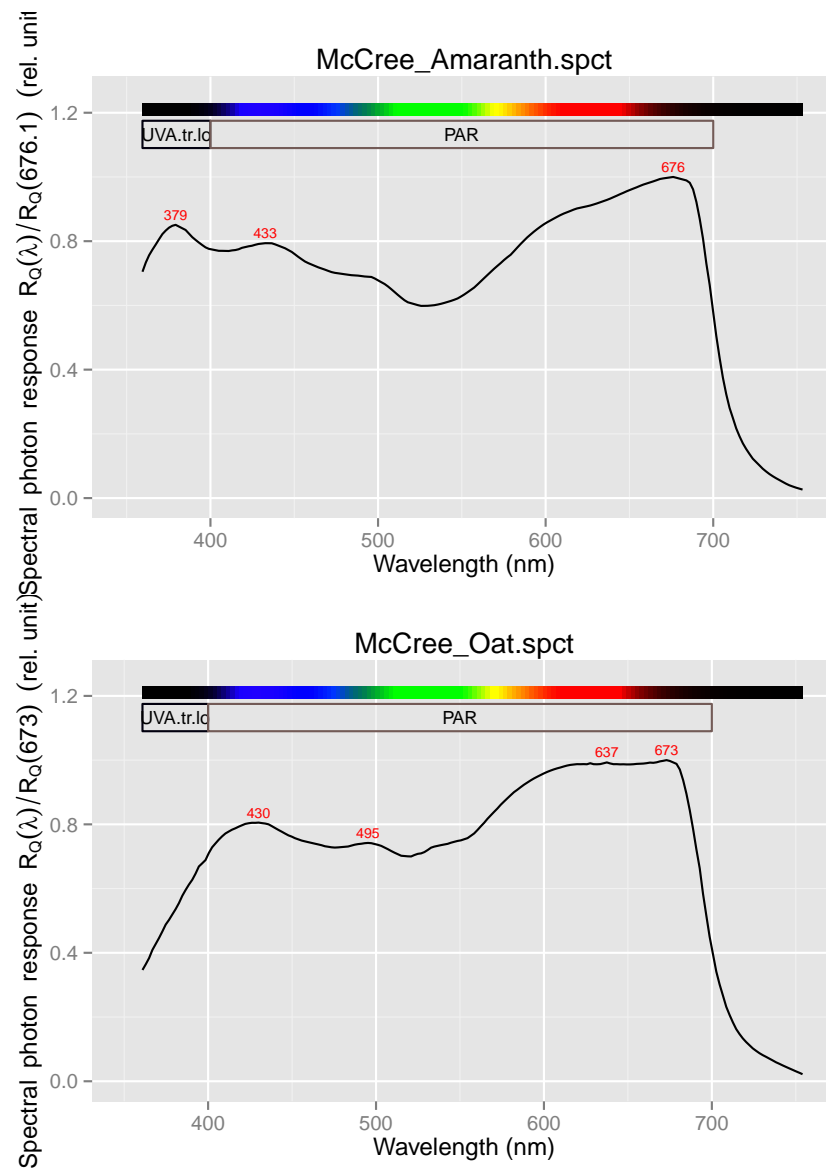
We can limit the plotted wavelengths to a range, even using another waveband object.

```
plot(UVR8_Glasgow.spct, range = UVB())
plot(UVR8_Glasgow.spct, range = UV())
```



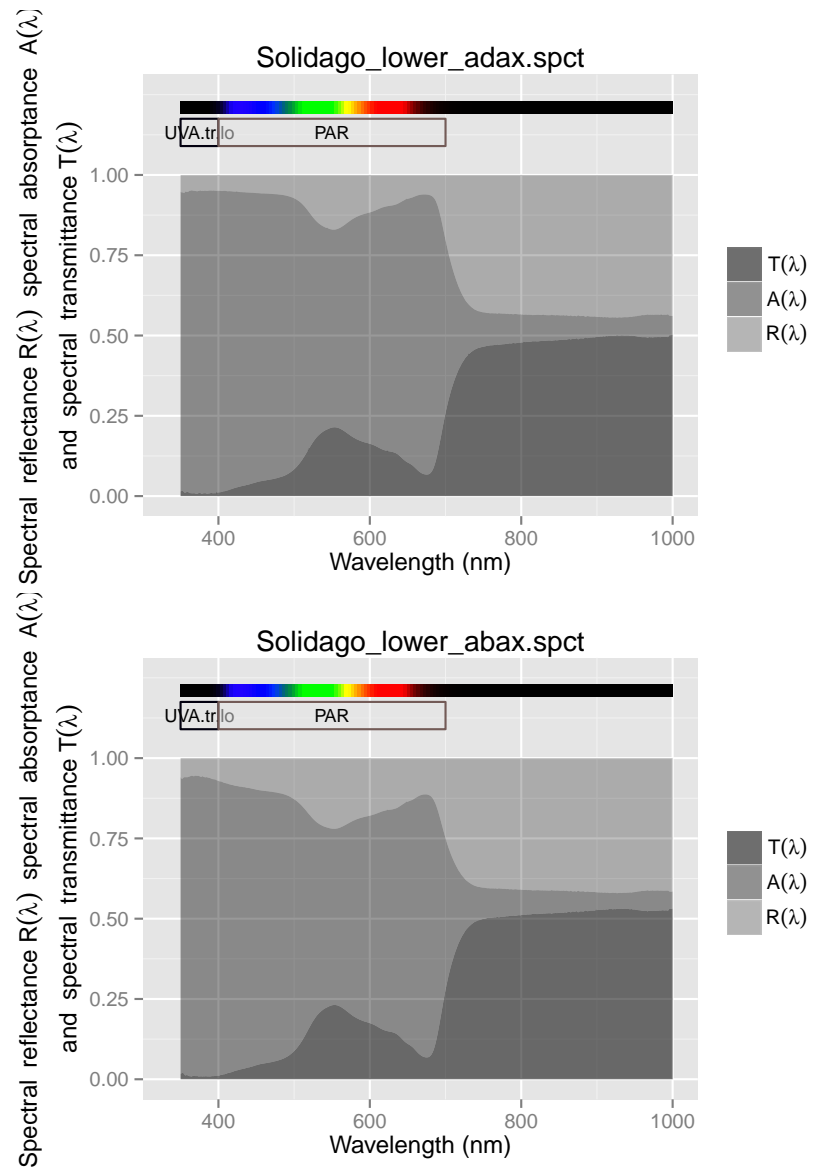
## 5 Photosynthesis action spectra

```
plot(McCree_Amaranth.spct)
plot(McCree_Oat.spct)
```



## 6 Optical properties of leaves

```
plot(Solidago_lower_adax.spct)
plot(Solidago_lower_abax.spct)
```



```
plot(Solidago_upper_adax.spct)
plot(Solidago_upper_abax.spct)
```

