photobiologyPlants Version 0.1.0
CRY related functions and data
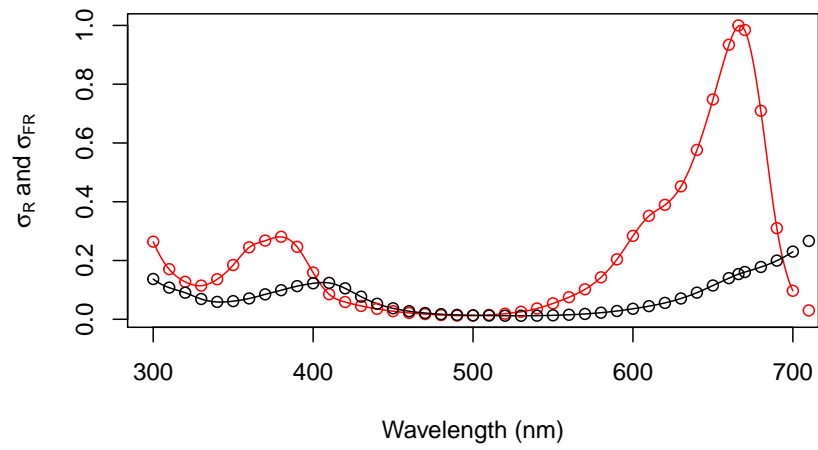
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1 Set up

```
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
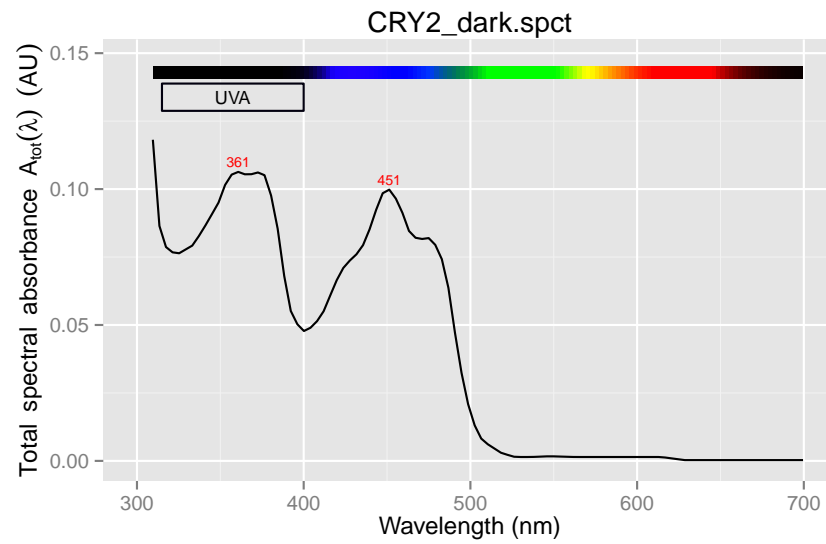
3 Test of interpolation
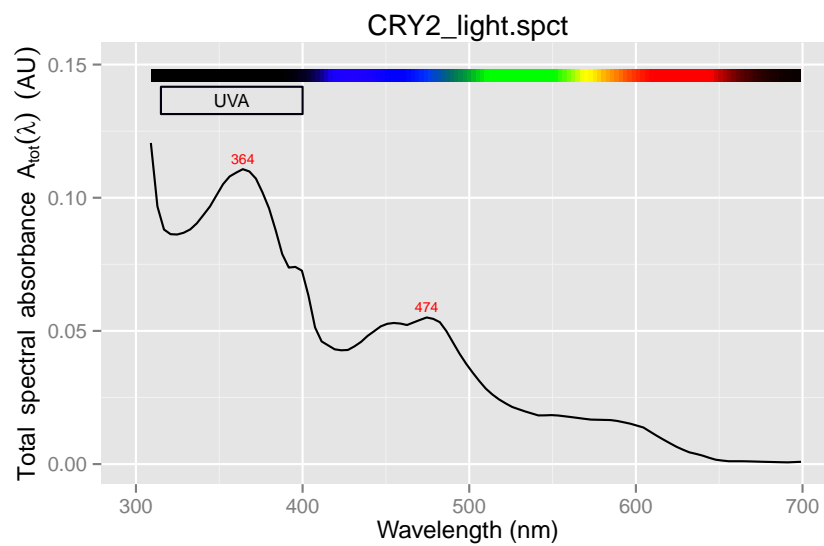
```
ex7.dt <- data.table(w.length=300:700,
                     sigma.r = Phy_Sigma_R(300:700),
                     sigma.fr = Phy_Sigma_FR(300:700),
                     sigma = Phy_Sigma(300:700))
plot(I(sigma.r/ max(sigma.r)) ~ w.length, data=ex7.dt, type="l", col="red",
     xlab="Wavelength (nm)", 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
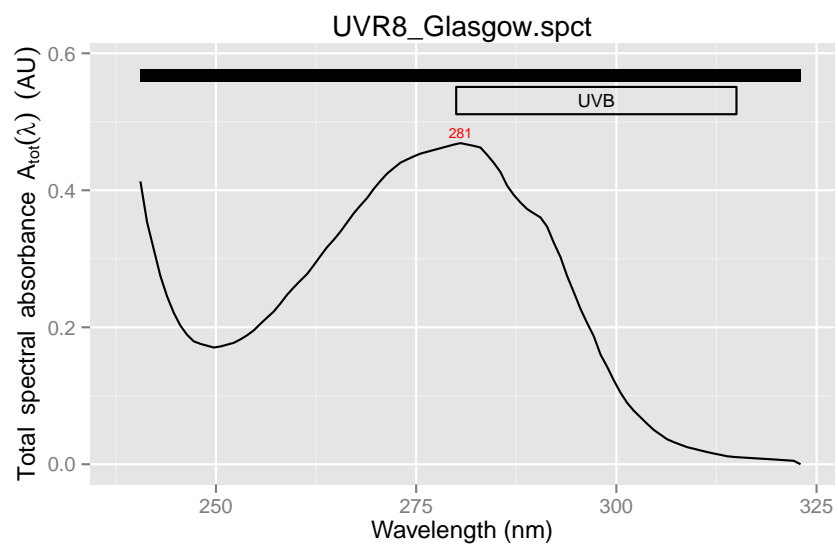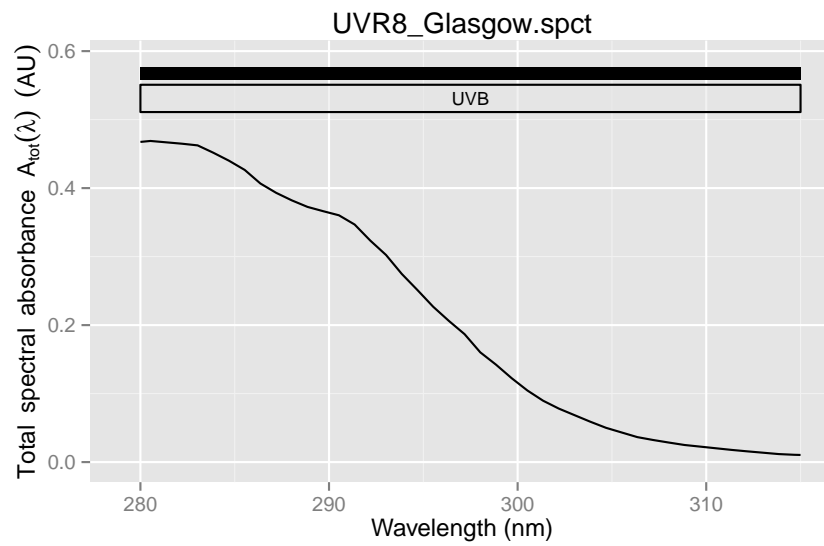
```
plot(CRY2_dark.spct)
plot(CRY2_light.spct)
```
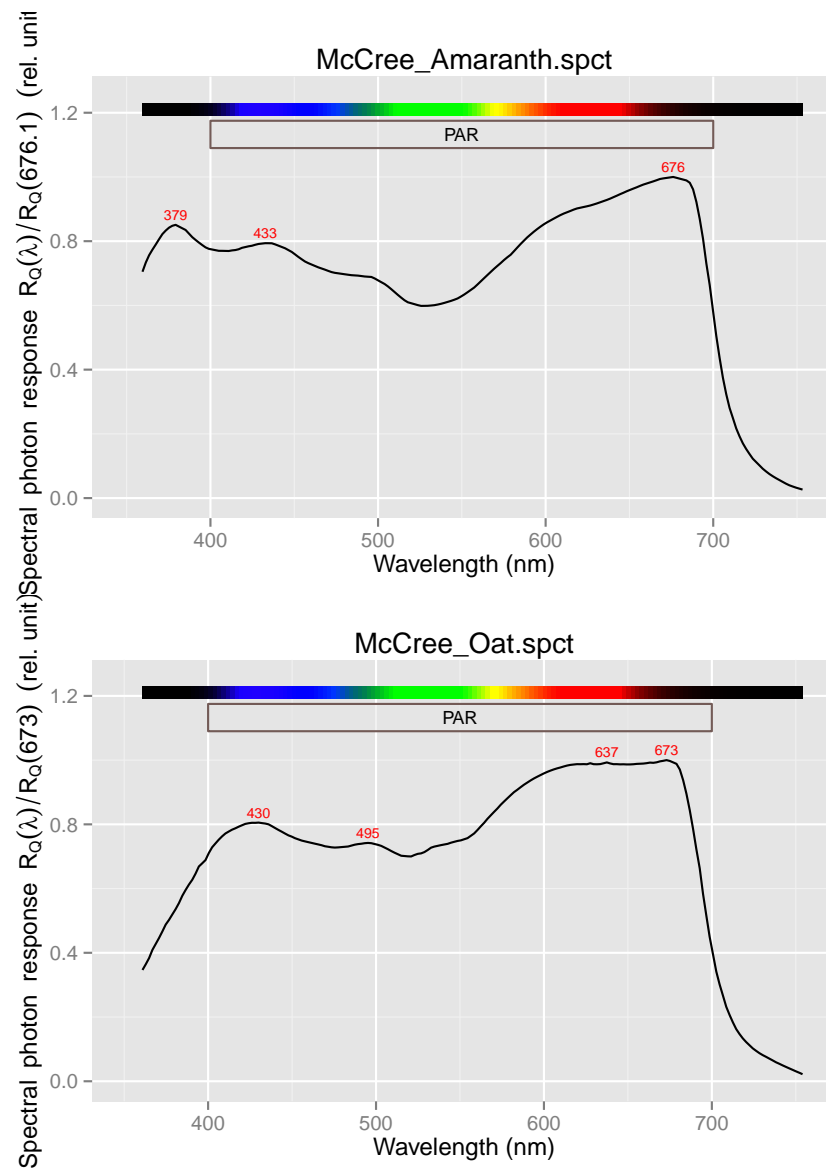
4.1 UVR8 wavebands

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())
```

UVR8_Glasgow.spct

UVR8_Glasgow.spct

5 Photosynthesis action spectra

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

McCree_Amaranth.spct

McCree_Oat.spct

6 Optical properties of leaves

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

Solidago_lower_adax.spct

Solidago_lower_abax.spct