

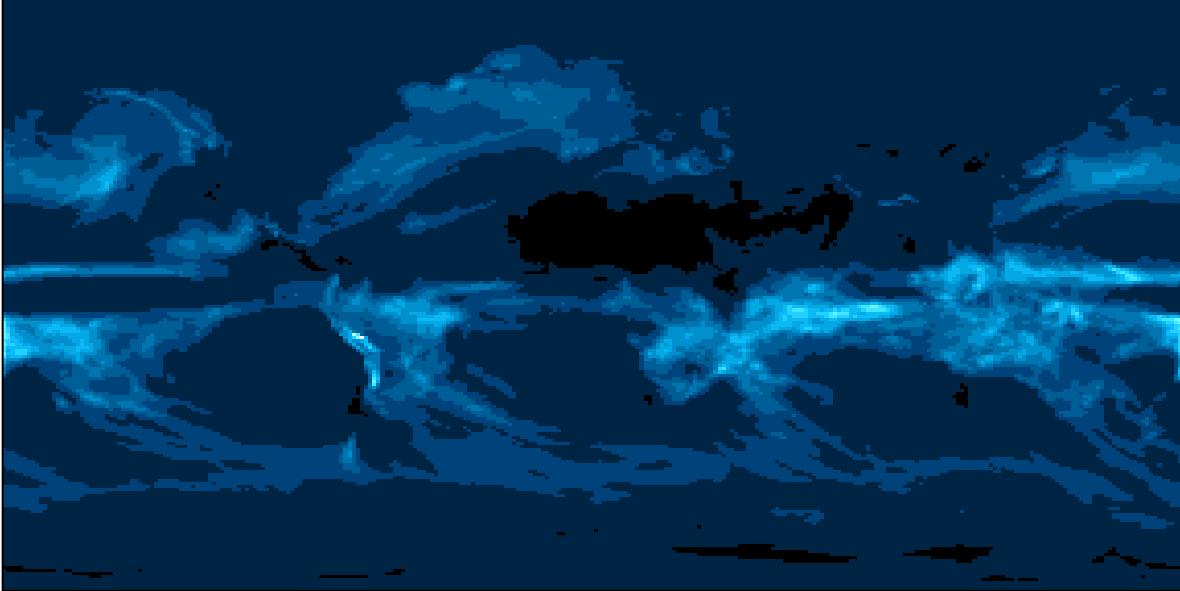
Extra Figures

```
library(raster)

## Loading required package: sp
library(rasterVis)

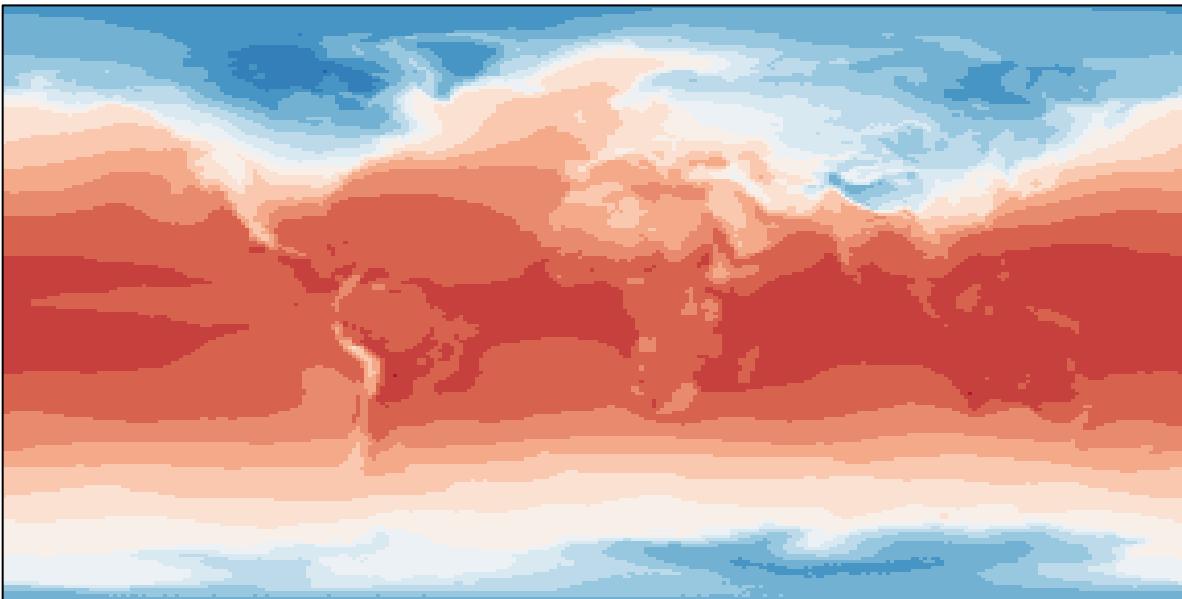
## Loading required package: lattice
## Loading required package: latticeExtra
## Loading required package: RColorBrewer
library(magrittr)

##
## Attaching package: 'magrittr'
## The following object is masked from 'package:raster':
##
##     extract
brick('Data/b40.lm850-1850.1deg.001.cam2.h0.PRECT.085001-185012.nc') %>%
  extract2(1) %>%
  rotate %>%
  multiply_by(2.628e+9) %>%
  levelplot(margin = F, par.settings = BTCTheme(), colorkey = F, xlab=NULL, ylab=NULL, scales=list(draw=TRUE))

## Loading required namespace: ncdf4

```

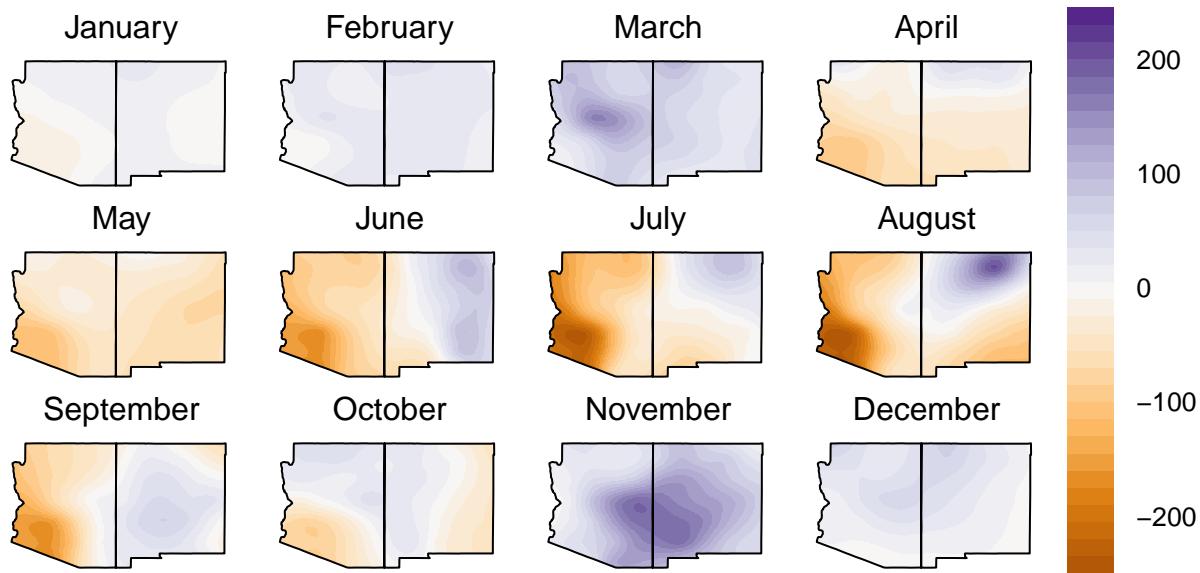
```
mean((brick('Data/b40.lm850-1850.1deg.001.cam2.h0.TREFMNAV.085001-185012.nc') %>%
  extract2(1) %>%
  rotate %>%
  subtract(273.15)),
(brick('Data/b40.lm850-1850.1deg.001.cam2.h0.TREFMXAV.085001-185012.nc') %>%
  extract2(1) %>%
```

```
rotate %>%
subtract(273.15))) %>%
levelplot(margin = F, par.settings = BuRdTheme(), colorkey = F, xlab=NULL, ylab=NULL, scales=list(draw=
```

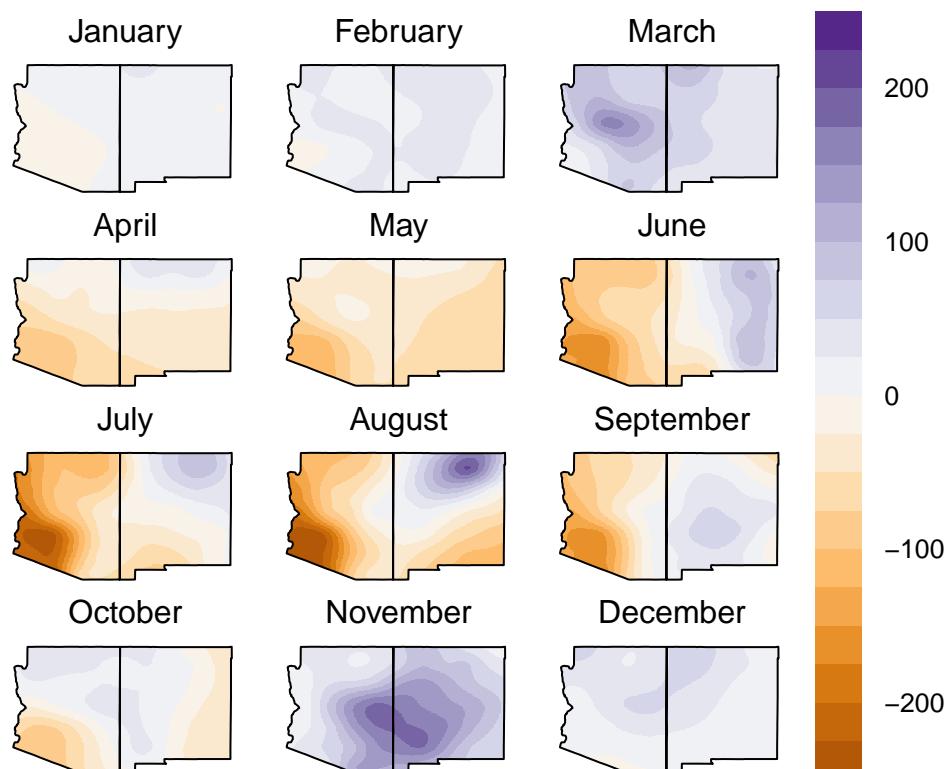


```
library(maps)
library(maptools)

## Checking rgeos availability: TRUE
states.ply <- maps::map('state', region = c('arizona', 'new mexico'), fill = T, plot = F)
IDs <- sapply(strsplit(states.ply$names, ":"), function(x) x[1])
states.ply <- map2SpatialPolygons(states.ply, IDs=IDs)
#assumes you have water stress map from sw_variability scitp
ws.map <- brick('Data/water_stress.nc')
ws.map.plot <- disaggregate(ws.map[[1:12]], fac = 5, method = 'bilinear') %>% mask(states.ply)
levelplot(ws.map.plot, names.attr = month.name, at = seq(-250,250, 15), xlab=NULL, ylab=NULL, scales=list(
  layer(sp.polygons(states.ply))
```



```
levelplot(ws.map.plot, names.attr = month.name, at = seq(-250,250, 25), xlab=NULL, ylab=NULL, scales=list(x=12, y=12))
layer(sp.polygons(states.ply))
```



```
eof.all <- brick('Data/eof_all.nc')[[1:6]] %>% mask(states.ply) %>% disaggregate(fac=10, method = 'bilinear')
names(eof.all) <- c('EOF1', 'EOF2', 'EOF3', 'EOF4', 'EOF5', 'EOF6')
levelplot(eof.all, par.settings = RdBuTheme(axis.line = list(col = "transparent")), xlab=NULL, ylab=NULL)
layer(sp.polygons(states.ply))
```

