Cartopy map gridlines and tick labels

The `Gridliner` instance, often created by calling the `cartopy.mpl.geoaxes.GeoAxes.gridlines()` method on a `cartopy.mpl.geoaxes.GeoAxes` instance, has a variety of attributes which can be used to determine draw time behaviour of the gridlines and labels.

Important

The current `Gridliner` interface is likely to undergo a significant change in the versions following v0.6 in order to fix some of the underying limitations of the current implementation.

class `cartopy.mpl.gridliner.`**`Gridliner`**(*axes*, *crs*, *draw_labels=False*, *xlocator=None*, *ylocator=None*, *collection_kwargs=None*) [source]

Object used by `cartopy.mpl.geoaxes.GeoAxes.gridlines()` to add gridlines and tick labels to a map.

Args:

- axes

  The `cartopy.mpl.geoaxes.GeoAxes` object to be drawn on.

- crs

  The `cartopy.crs.CRS` defining the coordinate system that the gridlines are drawn in.

- draw_labels

  Toggle whether to draw labels. For finer control, attributes of **`Gridliner`** may be modified individually.

- xlocator

  A `matplotlib.ticker.Locator` instance which will be used to determine the locations of the gridlines in the x-coordinate of the given CRS. Defaults to None, which implies automatic locating of the gridlines.

- ylocator

  A `matplotlib.ticker.Locator` instance which will be used to determine the locations of the gridlines in the y-coordinate of the given CRS. Defaults to None, which implies automatic locating of the gridlines.

- collection_kwargs

  Dictionary controlling line properties, passed to `matplotlib.collections.Collection`.

`collection_kwargs` = *None*

A dictionary passed through to `matplotlib.collections.LineCollection` on grid line creation.

`n_steps` = *None*

The number of interpolation points which are used to draw the gridlines.

`xformatter` = *None*

The `Formatter` to use for the x labels.

`xlabel_artists` = *None*

The x labels which were created at draw time.

`xlabel_style` = *None*

A dictionary passed through to `ax.text` on x label creation for styling of the text labels.

`xlabels_bottom` = *None*

Whether to draw labels on the bottom of the map.

`xlabels_top` = *None*

Whether to draw labels on the top of the map.

`xline_artists` = *None*

The x gridlines which were created at draw time.

`xlines` = *None*

Whether to draw the x gridlines.

`xlocator` = *None*

The `Locator` to use for the x gridlines and labels.

`yformatter` = *None*

The `Formatter` to use for the y labels.

`ylabel_artists` = *None*

The y labels which were created at draw time.

`ylabel_style` = *None*

A dictionary passed through to `ax.text` on y label creation for styling of the text labels.

`ylabels_left` = *None*

Whether to draw labels on the left hand side of the map.

`ylabels_right` = *None*

Whether to draw labels on the right hand side of the map.

`yline_artists` = *None*

The y gridlines which were created at draw time.

`ylines` = *None*

Whether to draw the y gridlines.

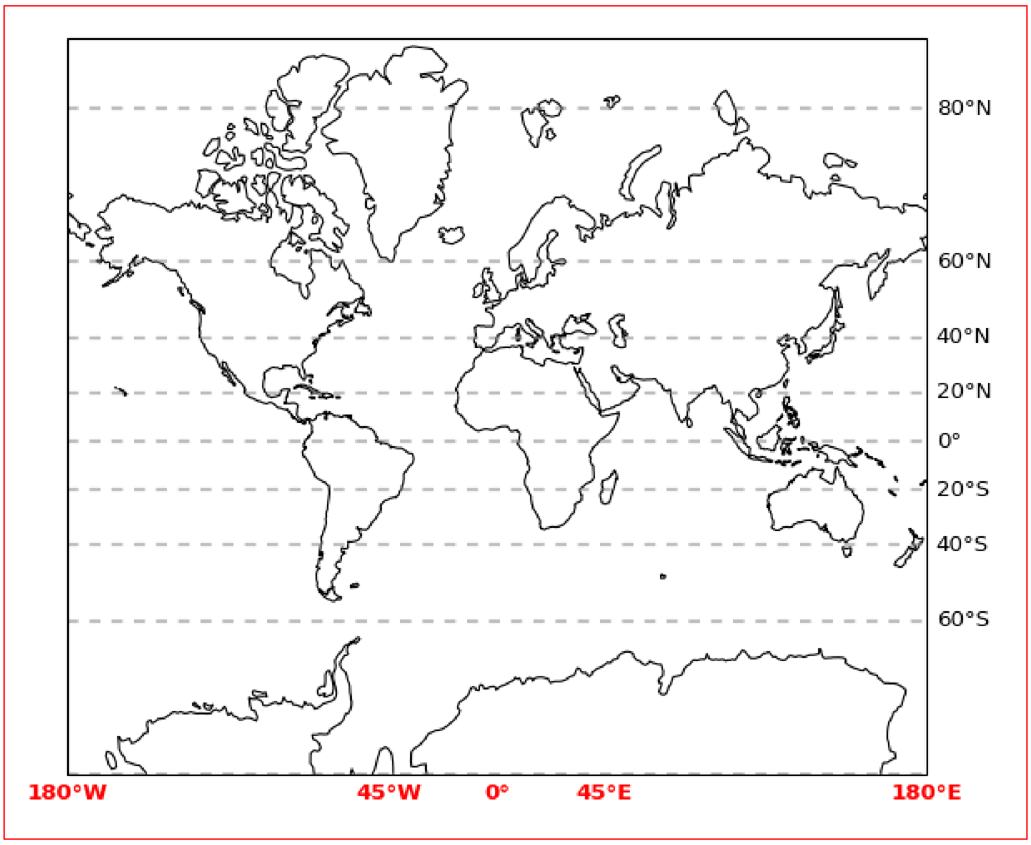
`ylocator` = *None*

The `Locator` to use for the y gridlines and labels.

The following contrived example makes use of many of the features of the Gridliner class to produce customized gridlines and tick labels:

```
import matplotlib.pyplot as plt
import matplotlib.ticker as mticker
import cartopy.crs as ccrs

from cartopy.mpl.gridliner import LONGITUDE_FORMATTER, LATITUDE_FORMATTER


ax = plt.axes(projection=ccrs.Mercator())
ax.coastlines()

gl = ax.gridlines(crs=ccrs.PlateCarree(), draw_labels=True,
                  linewidth=2, color='gray', alpha=0.5, linestyle='--')
gl.xlabels_top = False
gl.ylabels_left = False
gl.xlines = False
gl.xlocator = mticker.FixedLocator([-180, -45, 0, 45, 180])
gl.xformatter = LONGITUDE_FORMATTER
gl.yformatter = LATITUDE_FORMATTER
gl.xlabel_style = {'size': 15, 'color': 'gray'}
gl.xlabel_style = {'color': 'red', 'weight': 'bold'}

plt.show()
```

(Source code)


80°N
60°N
40°N
20°N
0°
20°S
40°S
60°S
180°W
45°W
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