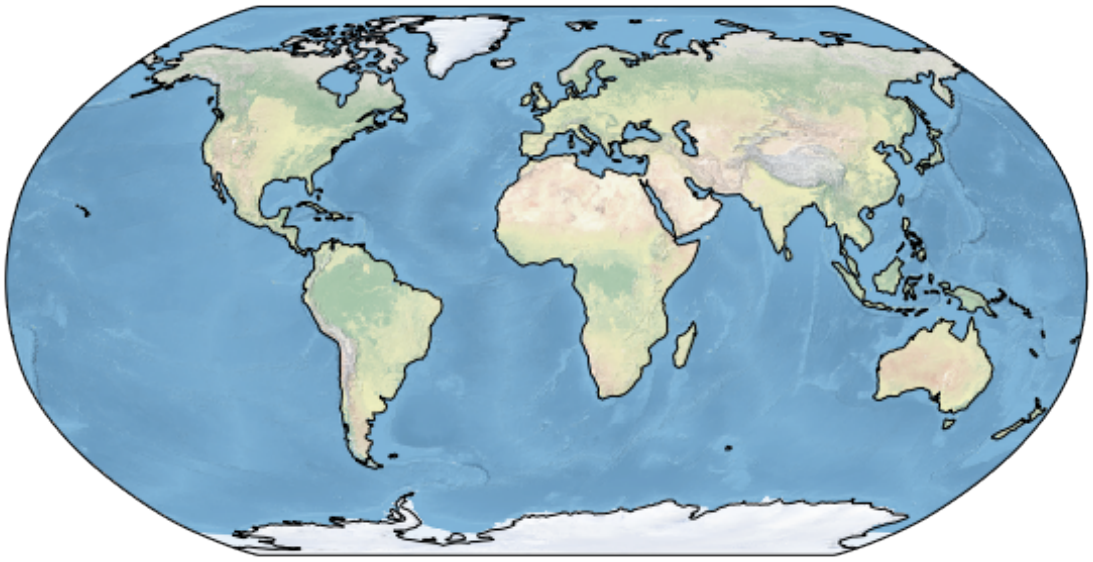
L09-18-11-7-P2-mapmaking-Live

November 12, 2018

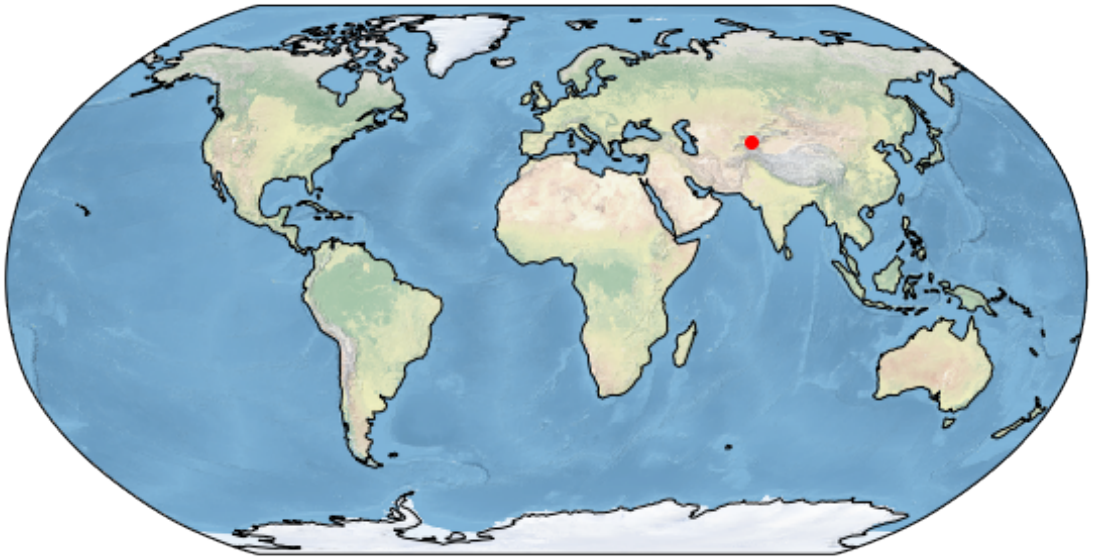
In [2]:
```
import matplotlib.pyplot as plt
import cartopy.crs as ccrs
%matplotlib inline
```

In [14]:
```
fig = plt.figure(figsize=(10,5))
ax = fig.add_subplot(1,1,1,projection=ccrs.Robinson())

ax.set_global()
ax.stock_img()
ax.coastlines()
plt.show()
```

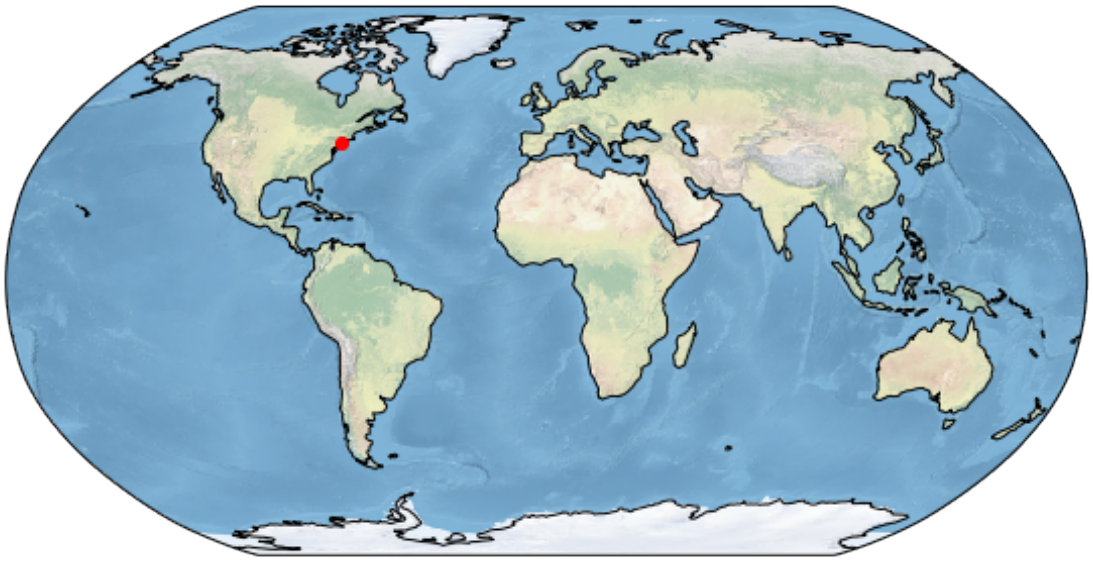


In [16]:
```
#40.7128° N, 74.0060° W

fig = plt.figure(figsize=(10,5))
ax = fig.add_subplot(1,1,1,projection=ccrs.Robinson())
```

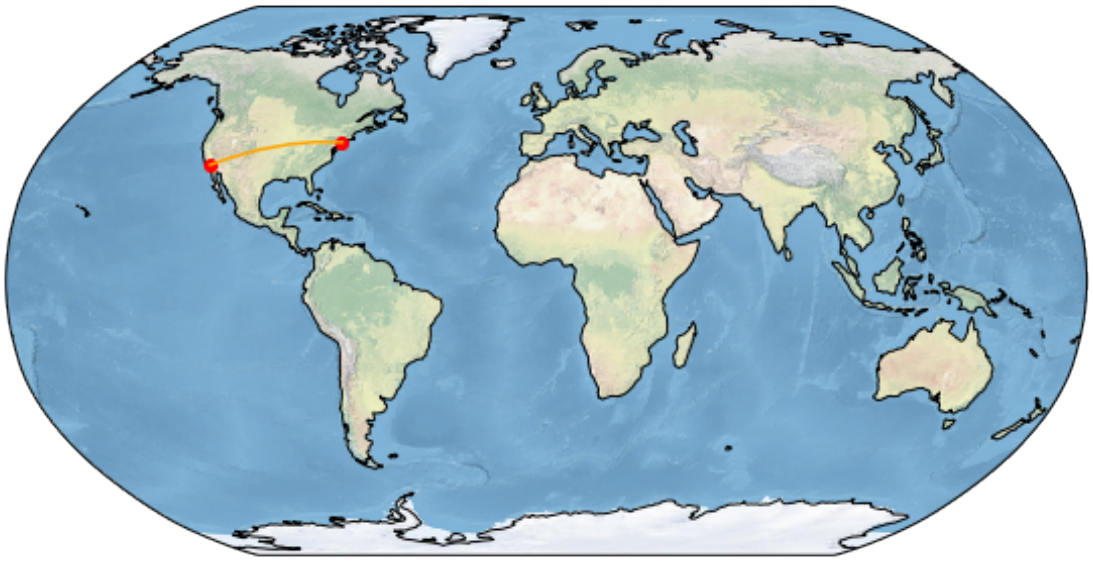
```
ax.set_global()
ax.stock_img()
ax.coastlines()
ax.plot(74.0060,40.7128, 'o', color='R',transform=ccrs.PlateCarree())
plt.show()
```



In [17]:
```
#40.7128° N, 74.0060° W

fig = plt.figure(figsize=(10,5))
ax = fig.add_subplot(1,1,1,projection=ccrs.Robinson())

ax.set_global()
ax.stock_img()
ax.coastlines()
ax.plot(360-74.0060,40.7128, 'o', color='R',transform=ccrs.PlateCarree())
plt.show()
```



In [20]:
```
# LA 34.0522ř N, 118.2437ř W

#40.7128ř N, 74.0060ř W

fig = plt.figure(figsize=(10,5))
ax = fig.add_subplot(1,1,1,projection=ccrs.Robinson())

#ax.set_global()
ax.stock_img()
ax.coastlines()
ax.plot(360-74.0060,40.7128, 'o', color='R',transform=ccrs.PlateCarree())
ax.plot(360-118.2437,34.0522, 'o', color='R',transform=ccrs.PlateCarree())
ax.plot([360-74.0060, 360-118.2437],[40.7128, 34.0522],
        transform=ccrs.Geodetic(), color='orange')
plt.show()
```



```
In [21]: import cartopy.io.shapereader as shpreader

         shpfilename = shpreader.natural_earth( resolution='110m',
                                                category='cultural',
                                               name='admin_0_countries')

In [23]: reader = shpreader.Reader(shpfilename)
         countries = reader.records()
         country = next(countries)

In [24]: country

Out[24]: <Record: <shapely.geometry.multipolygon.MultiPolygon object at 0x7ffb315b32b0>, {'feat

In [25]: country.attributes.keys()

Out[25]: dict_keys(['featurecla', 'scalerank', 'LABELRANK', 'SOVEREIGNT', 'SOV_A3', 'ADMO_DIF'

In [27]: country.attributes['INCOME_GRP']

Out[27]: '4. Lower middle income'

In [32]: import matplotlib.cm as mcm

         fig = plt.figure(figsize=(10,5))
         ax = fig.add_subplot(1,1,1,projection=ccrs.Robinson())

         ax.set_global()
         ax.stock_img()
```

```
ax.coastlines()

for cgeo, crec in zip(reader.geometries(), reader.records()):
    inc_code = int(crec.attributes['INCOME_GRP'].split('.')[0])
    fc = mcm.tab20(inc_code)
    ax.add_geometries([cgeo],ccrs.PlateCarree(),
                      edgecolor='k', facecolor=fc)
plt.show()
```