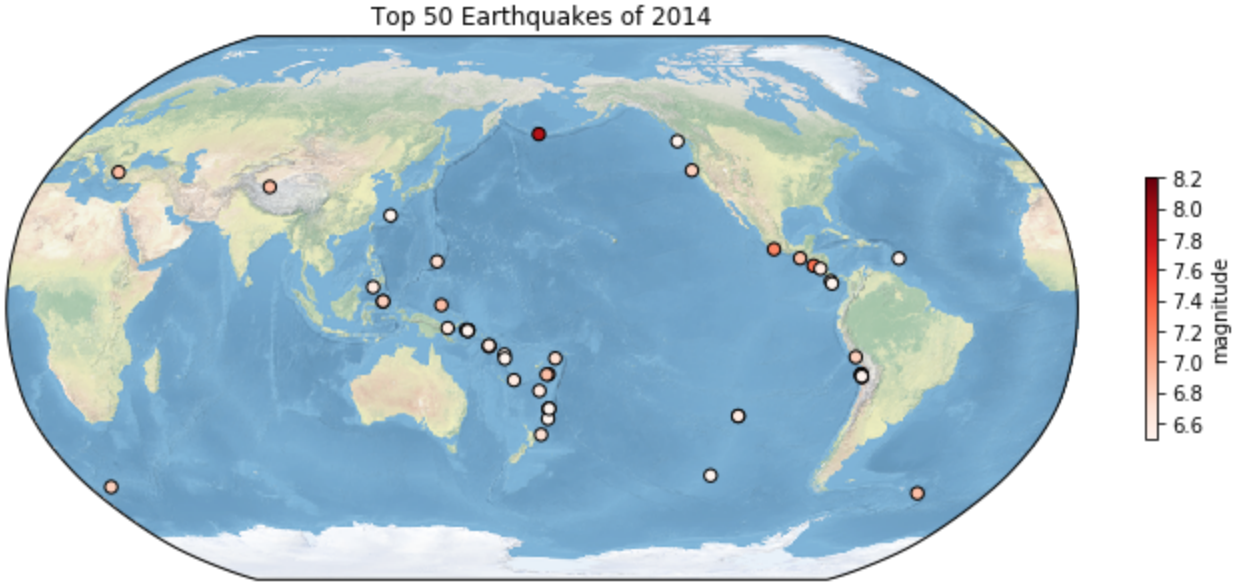
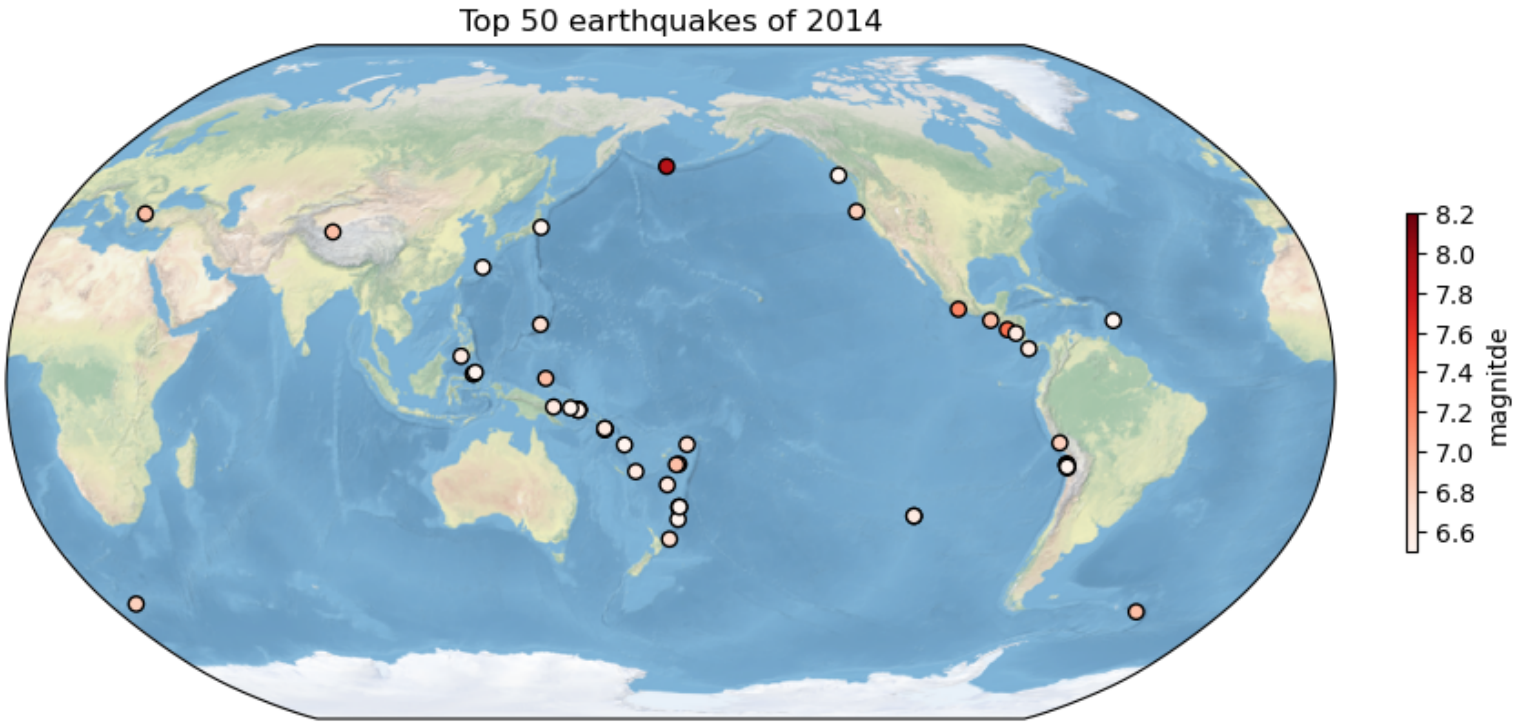
PS4

1. Global Earthquakes

In this problem set, we will use `this file` from the USGS Earthquakes Database. The dataset is similar to the one you use in `Assignment 02`. Use the file provided (`usgs_earthquakes.csv`) to recreate the following map. Use the mag column for magnitude.



	latitude	longitude	mag
0	-19.6097	-70.7691	8.2
1	51.8486	178.7352	7.9
2	-20.5709	-70.4931	7.7
3	-11.2701	162.1481	7.6
4	-6.7547	155.0241	7.5



I struggled duplicating the colorbar but failed. So I eventually built up a similar one by configuring the parameters using code I found here.

2. Explore a `netCDF` dataset

xarray.Dataset

► Dimensions:	(**lat**: 72, **lon**: 144, **time**: 518, nv: 2)		
▼ Coordinates:			
lat	(lat)	float32	-88.75 -86.25 ... 86.25 88.75
lon	(lon)	float32	1.25 3.75 6.25 ... 356.2 358.8
time	(time)	datetime64[ns]	1979-01-01 ... 2022-02-01
▼ Data variables:			
time_bnds	(time, nv)	datetime64[ns]	...
lat_bnds	(lat, nv)	float32	...
lon_bnds	(lon, nv)	float32	...
precip	(time, lat, lon)	float32	...
► Attributes:	(18)		

xarray.DataArray 'precip' (**lat**: 72, **lon**: 144)

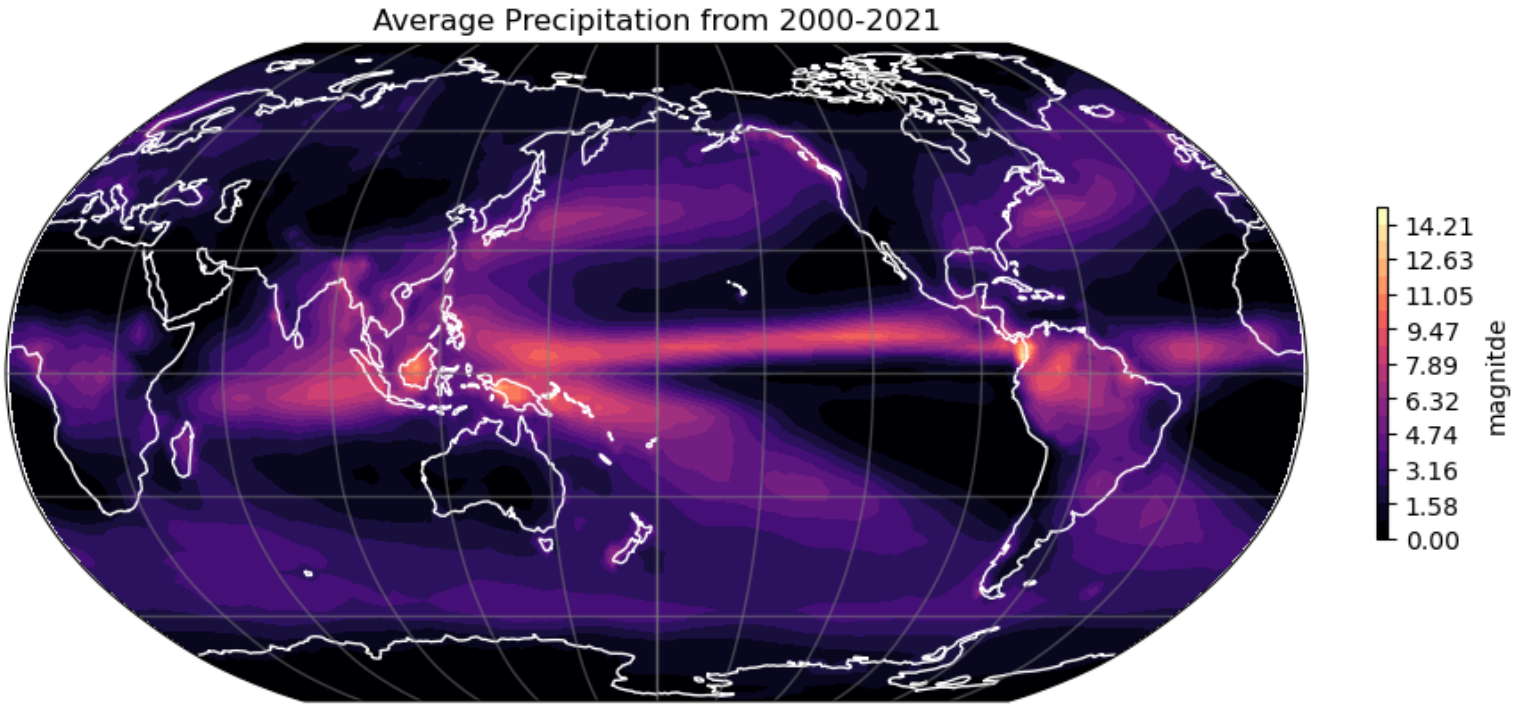
array([[0.27466023, 0.27260736, 0.27007297, ..., 0.28132147, 0.28431702,
0.2850295],
[0.17602305, 0.16965999, 0.16432683, ..., 0.1870083 , 0.18491435,
0.17955467],
[0.16555646, 0.15841733, 0.14548525, ..., 0.18882482, 0.18233374,
0.17518856],
...,
[0.58530974, 0.58976567, 0.5973426 , ..., 0.57481873, 0.5749362 ,
0.5773249],
[0.55073905, 0.55105466, 0.5548307 , ..., 0.5438954 , 0.5456614 ,
0.5458009],
[0.5365207 , 0.5351564 , 0.5409608 , ..., 0.5310979 , 0.5351761 ,
0.5343832]], dtype=float32)

▼ Coordinates:

lat	(lat)	float32	-88.75 -86.25 ... 86.25 88.75
lon	(lon)	float32	1.25 3.75 6.25 ... 356.2 358.8

► Attributes: (0)

```
Text(0.5, 1.0, 'Average Precipitation from 2000-2021')
```




```
Text(121.2, 41.2, 'Jinzhou')
```

Average Precipitation in Liaoning from 2000-2021