During our class so far we have covered several important ways of creating, opening and analyzing data.

### Variables and Dimensions

- **Variables**:
  - `time`
  - `lat`
  - `lon`
  - `value`

- **Dimensions**:
  - `time`: 2
  - `lat`: 10
  - `lon`: 10

### Units

- **Air temperature**: `K`
- **Lat**: `deg`
- **Lon**: `deg`
- **Value**: `K`

### Data Array

- **Shape**: `(2, 10, 10)`
- **Values**:

  ```
  [[1565.2801513671875, 1565.6241455078125, 1566.0828857421875],
   [1508.883544921875, 1508.1318359375, 1507.405517578125],
   [1514.1077880859375, 1511.6358642578125, 1509.3677978515625],
   [1569.8282470703125, 1570.5035400390625, 1571.0260009765625],
   [1477.5252685546875, 1477.9840087890625, 1478.4528350830078]],
  ```

### Conversions and Operations

- **Date conversion**:
  - `cftime.DatetimeGregorian(2021, 6, 29, 0, 0, 0, 0, has_year_zero=False)`
  - `cftime.DatetimeGregorian(2021, 6, 30, 16, 0, 0, 0, has_year_zero=False)`
  - `cftime.DatetimeGregorian(2021, 6, 30, 10, 0, 0, 0, has_year_zero=False)`
  - `cftime.DatetimeGregorian(2021, 6, 29, 20, 0, 0, 0, has_year_zero=False)`

### File Operations

- **Creating files**:
  - `ncrcat Q.2021062900_2021062923.nc Q.2021063000_2021063023.nc Q.nc`
  - `ncrcat Z.2021062900_2021062923.nc Z.2021063000_2021063023.nc Z.nc`

- **Appending files**:
  - `Appended file Q.nc had following "history" attribute:`
  - `Appended file Z.nc had following "history" attribute:`

- **Converting to netcdf**:
  - `CONVERSION_DATE: Fri Sep  3 12:24:18 MDT 2021`
  - `NETCDF_VERSION: 4.7.4`
Check #3

Plot the temperature at the lowest level (0) at the 6th hour of August 29th using xarray+ metpy.