**LAB 1**

1. Zulu time, or Coordinated Universal Time (UTC), is a time standard that is the same all year round, and does not change with daylight saving time. Local standard time in Houston, Texas, on the other hand, changes with daylight saving time. In the winter, Houston is on Central Standard Time (CST), which is UTC-6 hours. In the summer, Houston is on Central Daylight Time (CDT), which is UTC-5 hours. So, the difference between Z time and local standard time in Houston in the winter is 6 hours and in the summer is 5 hours.

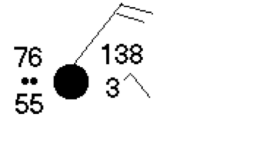
2. The corresponding local time in Houston, TX, for a weather observation reported at 1900 Z (UTC) on Jan 15, 2013, would be 1:00 PM, Central Standard Time (CST).

You can convert from UTC to local time by subtracting the number of hours difference between UTC and the local time zone. In this case, Houston is in the Central Time Zone which is UTC -6 hour in the winter. So, to convert from UTC to CST, you would subtract 6 hours from the UTC time. 1900 UTC - 6 hours = 1:00 PM CST

3. To find the Coordinated Universal Time (UTC) for 7:00 PM on July 10, 2012, in Houston, Texas, you would need to add the number of hours difference between the local time and UTC. In this case, Houston is in the Central Daylight Saving Time (CDT), which is UTC-5 hours during the summer months. So, to convert from CDT to UTC, you would add 5 hours to the local time. 7:00 PM CDT + 5 hours = 00:00 on July 11, 2012 UTC.

It's important to note that the date in UTC will change when converting from a local time that is during a daylight saving transition. The date in this example changes from July 10 to July 11.

4. temperature: 76 F, dew point: 55 F, wind direction: shaft orientation, NE wind; wind speed: 20 kts?, cloud cover: fill of station circle, overcast-🡪100%; pressure: descending , pressure change: 0.3mb



5. a ) From the table, the maximum temperature reported for Houston during the 24 hours listed is 61 degrees Fahrenheit and the minimum temperature reported is 39 degrees Fahrenheit. The maximum temperature of 61 degrees Fahrenheit was reported at 1853Z on December 13, 2012, which corresponds to 1:53 PM (CST) on December 13, 2012. The minimum temperature of 39 degrees Fahrenheit was reported at 0653Z on December 13, 2012, which corresponds to 1:53 AM (CST) on December 13, 2012.

b. From the table, the temperature, dewpoint, and relative humidity at 10:53AM (1053Z) on December 13, 2012 (UTC) are:

Temperature: 43 degrees Fahrenheit, Dewpoint: 33 degrees Fahrenheit, Relative humidity: 68%

This observation was taken at 1053Z on December 13, 2012 which corresponds to 5:53 AM (CST) on December 13, 2012.

c. Chart, line chart

Description automatically generated

d. The dew point depression is calculated by subtracting the dewpoint temperature from the air temperature. The maximum dew point depression occurs when the difference between the two is greatest.

As per the data provided, the maximum dew point depression of 40 degrees Fahrenheit occurs at 12/2153 UTC which corresponds to 4:53 PM on December 12th, 2012.

e. As per the data provided, the minimum relative humidity is 21% that occurs at 12/2153Z (UTC) which corresponds to 2:53 PM on December 12th, 2012.

f. 10 knots. Wind is reaching the maximum value at 13/1553Z which corresponds to 9:53 AM on December 13th, 2012.

g. Sea level pressure: 1026.2 hPa (30.29 inHg)

Temperature: 43°F

Dewpoint: 33°F

Relative Humidity: 68%

Wind Direction: 70°

Wind Speed: 6 kt

Visibility: 10.0 miles

Clouds: CLR (clear)

Minimum temperature for the day: 38°F

Maximum temperature for the day: 59°F

**Instead of 26.2 ---🡪 262**

**Instead of -6 ---🡪 1**

