

**APPENDIX A**

**WEATHER MAPS AND GRAPHS**

EXCEPTIONAL EVENTS DEMONSTATION FOR 2023 PM<sub>2.5</sub>  
EXCEEDANCES AT ATASCOSA, HIDALGO, TARRANT, AND  
WEBB COUNTIES

AUGUST 5, 2025

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
P.O. BOX 13087  
AUSTIN, TEXAS 78711-3087

## APPENDIX A: WEATHER MAPS AND GRAPHS

### A.1: GROUP 1 - JANUARY 2 AND JANUARY 3, 2023

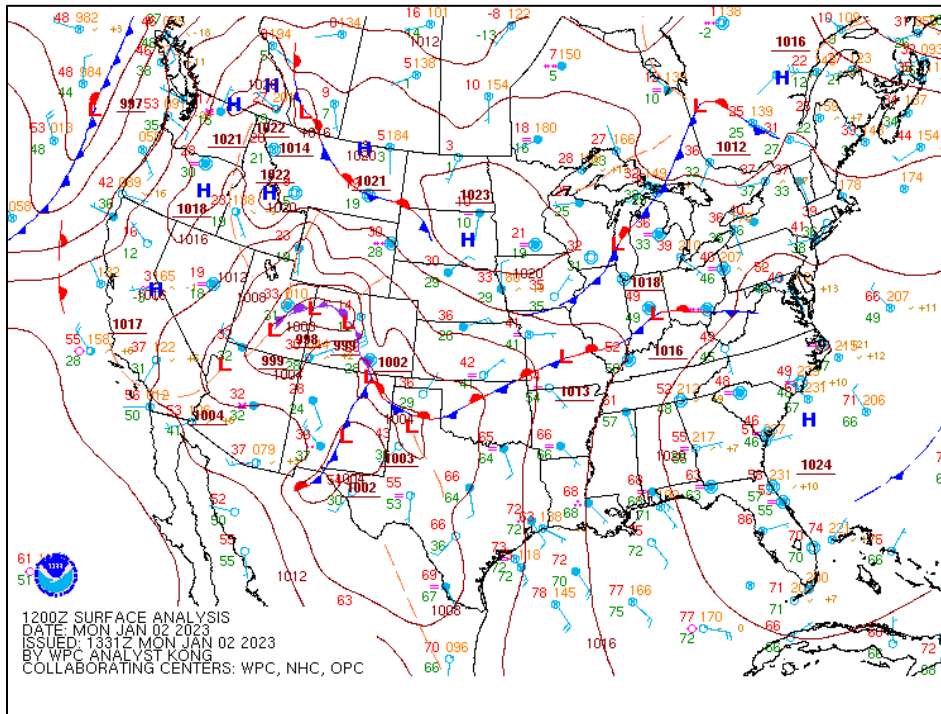


Figure A-1: National Weather Surface Weather Prediction Center (January 2, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST

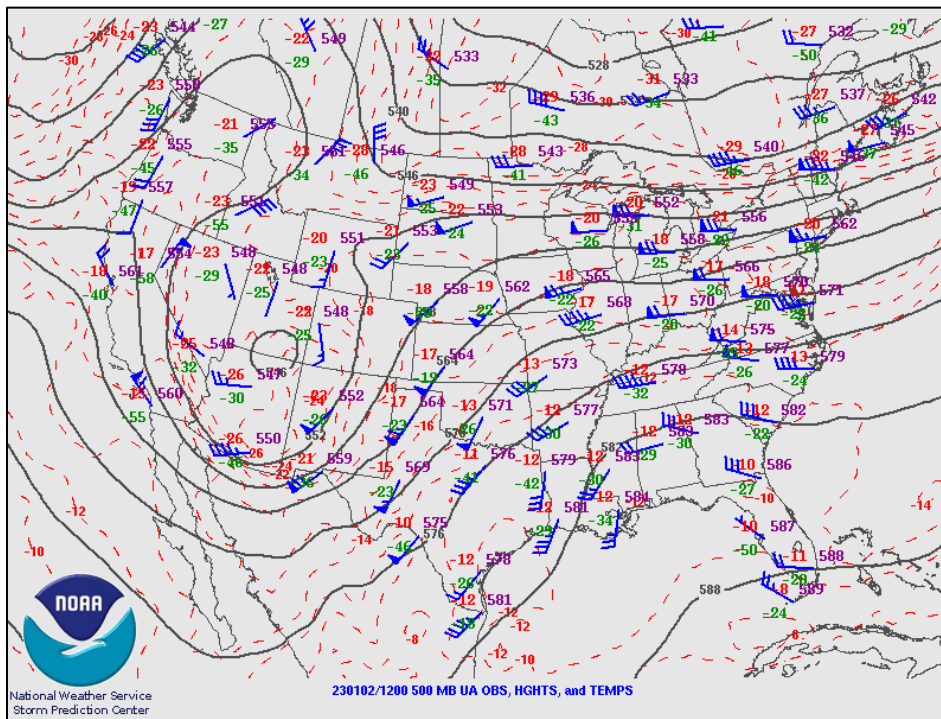


Figure A-2: National Weather Service Storm Prediction Center (January 2, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST

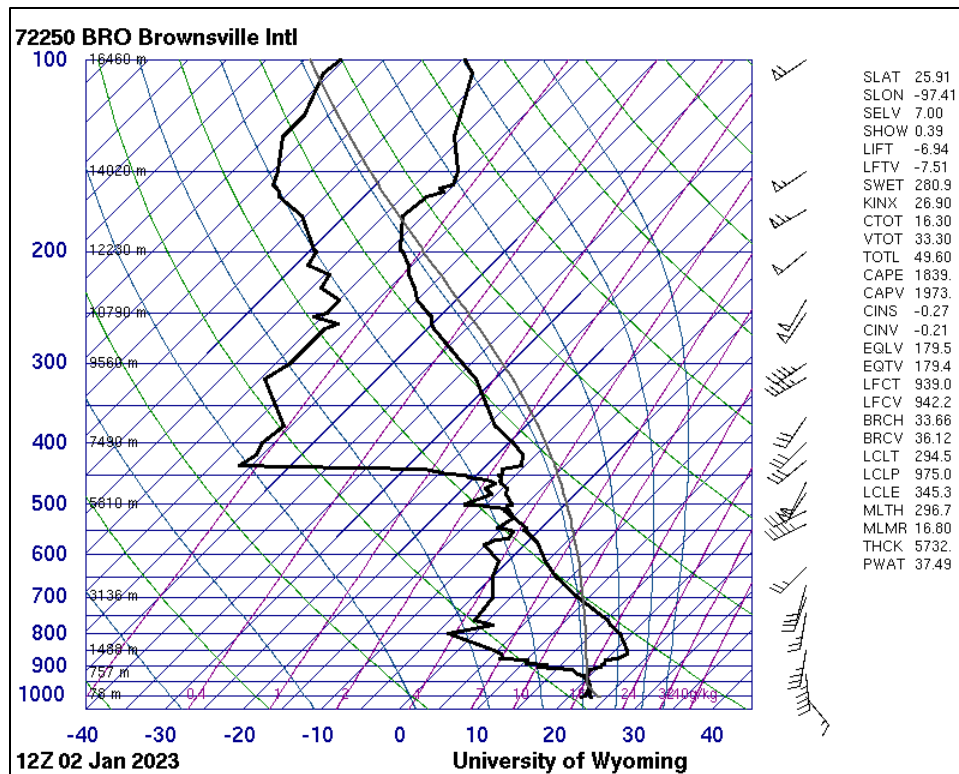


Figure A-3: Upper Air Sounding Chart from Brownsville, Texas on January 2, 2023, at (12Z) 6:00 a.m. CST

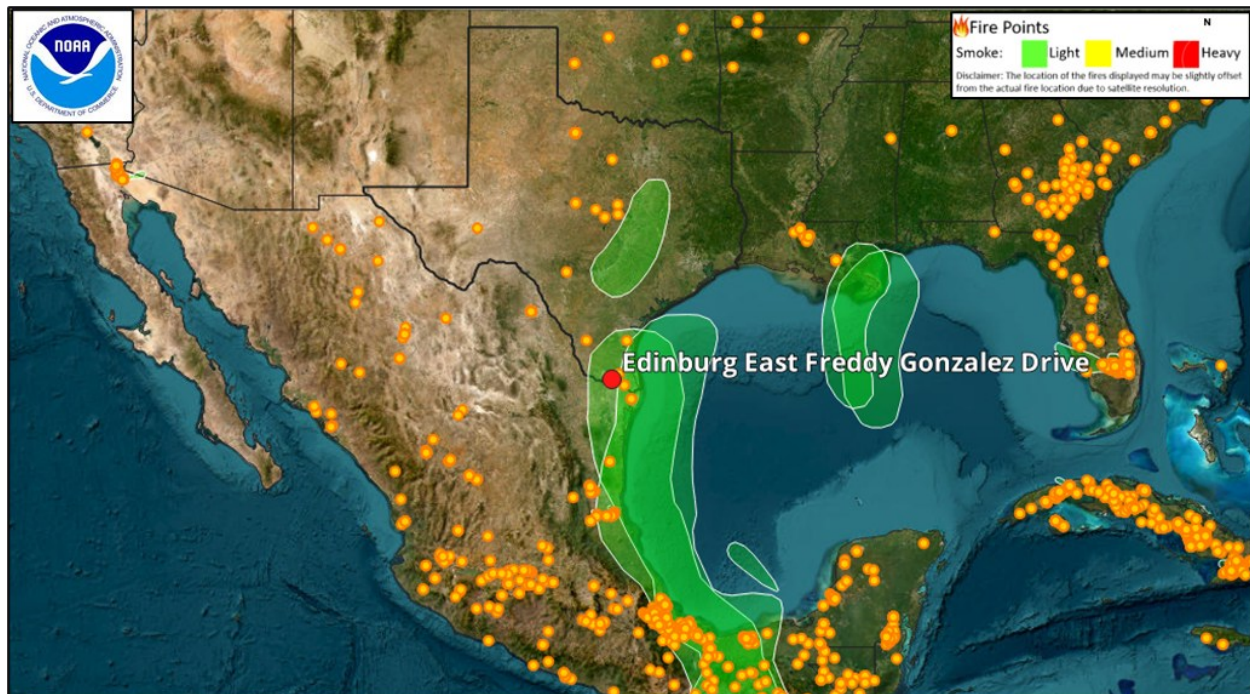
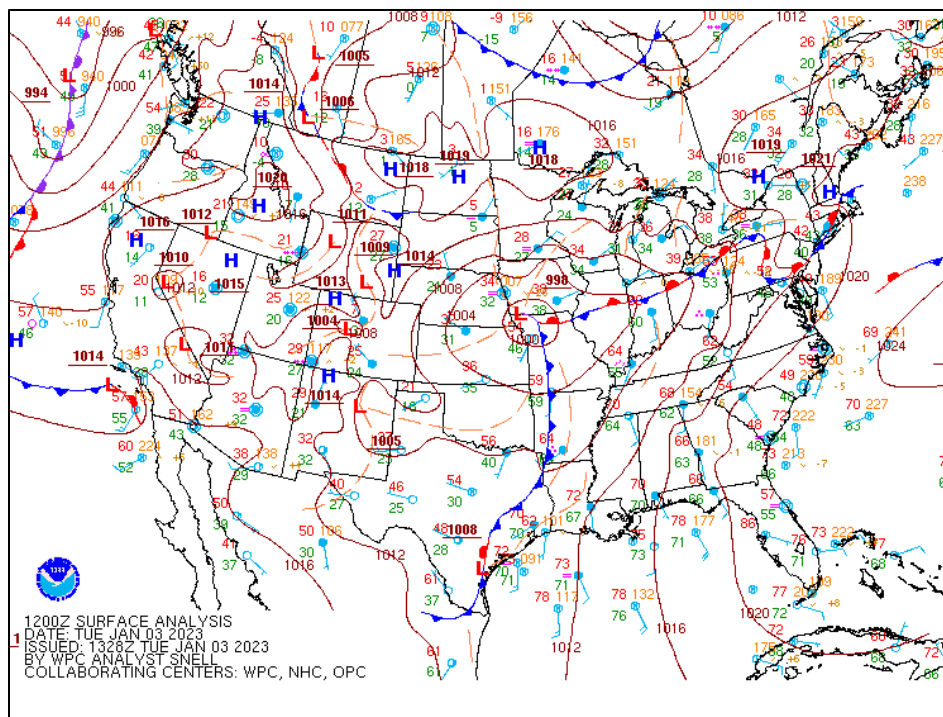
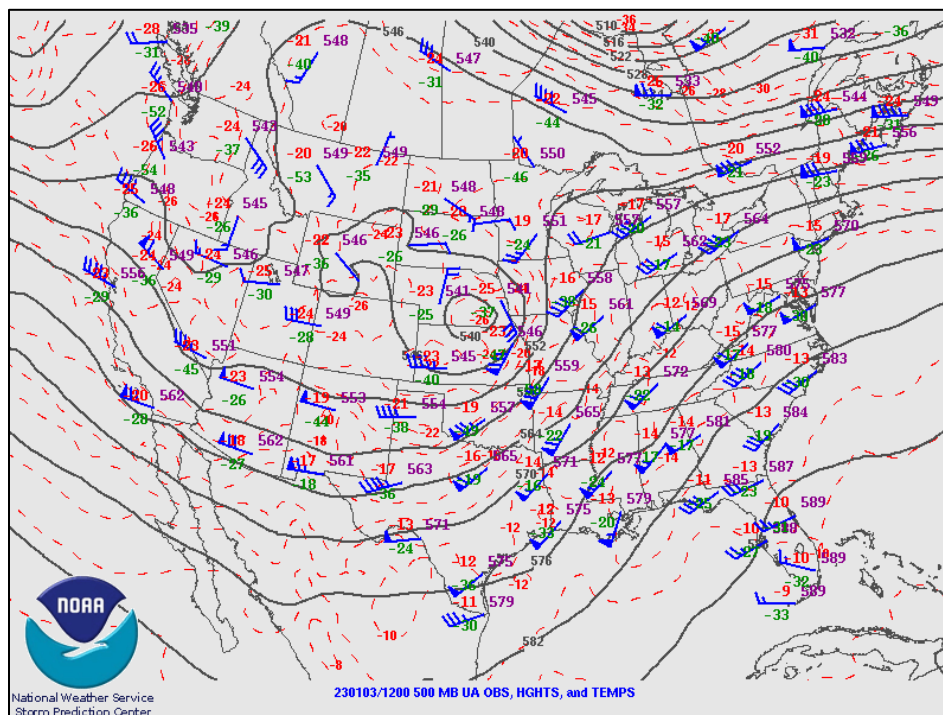


Figure A-4: NOAA HMS Fire and Smoke Map on January 2, 2023



**Figure A-5: National Weather Surface Weather Prediction Center (January 3, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST**



**Figure A-6: National Weather Service Storm Prediction Center (January 3, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST**



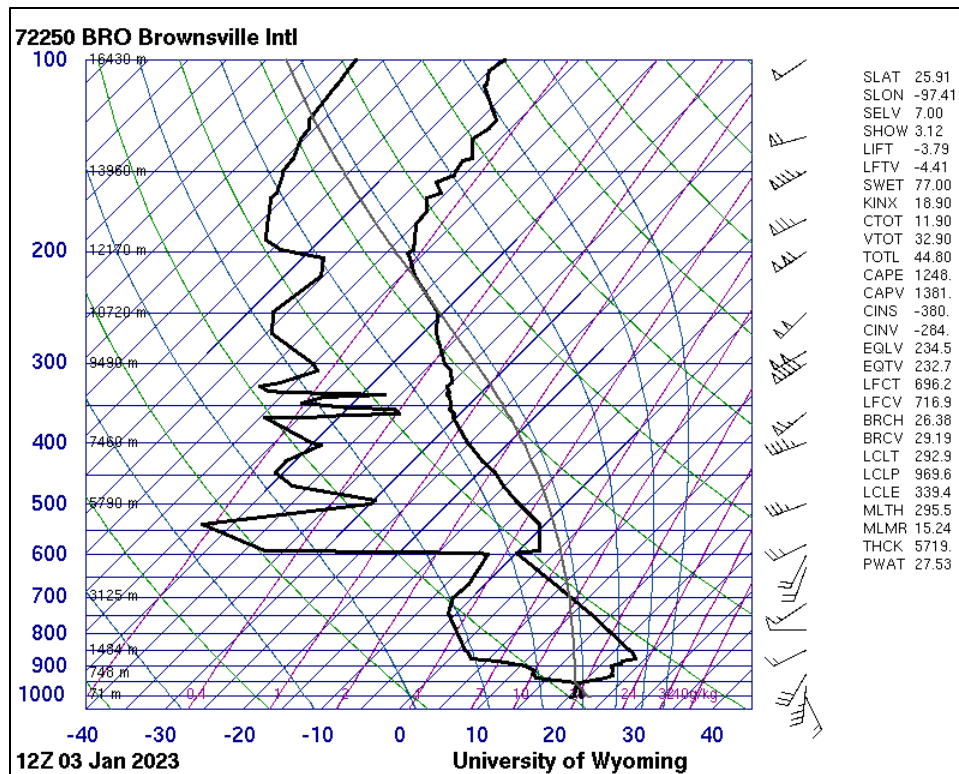


Figure A-7: Upper Air Sounding Chart from Brownsville, Texas on January 3, 2023, at (12Z) 6:00 a.m. CST

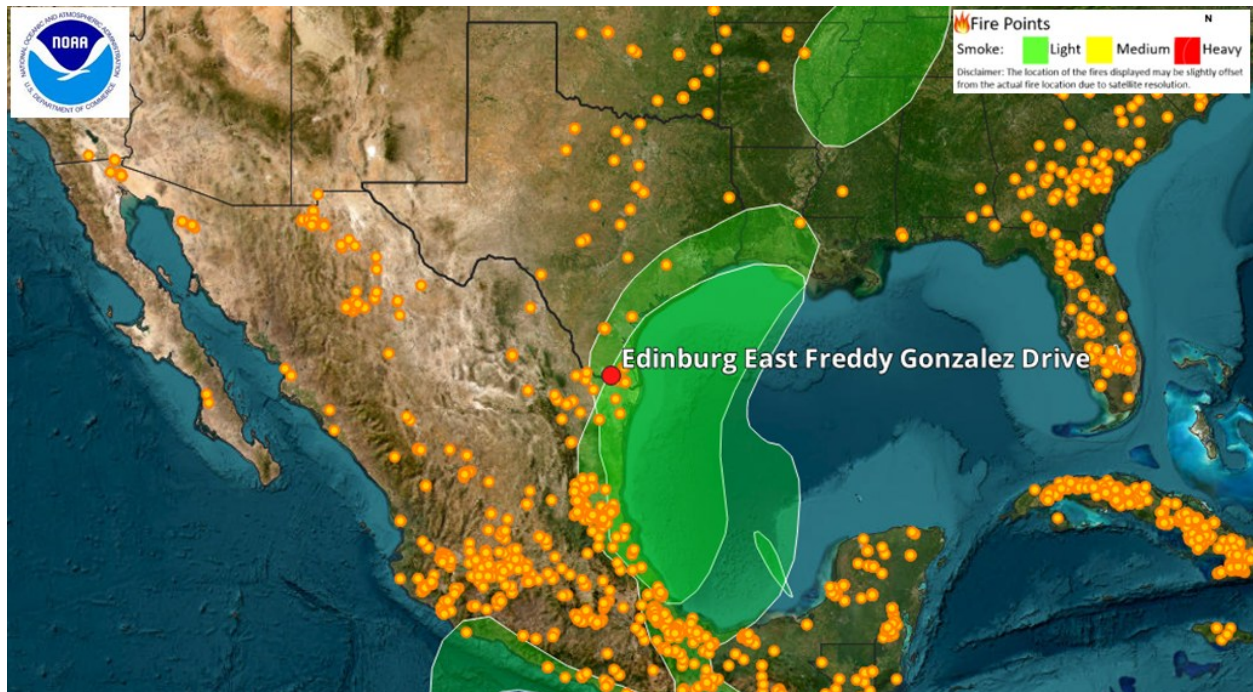


Figure A-8: NOAA HMS Fire and Smoke Map on January 3, 2023

## A.2: GROUP 2 – FEBRUARY 26 AND FEBRUARY 27, 2023

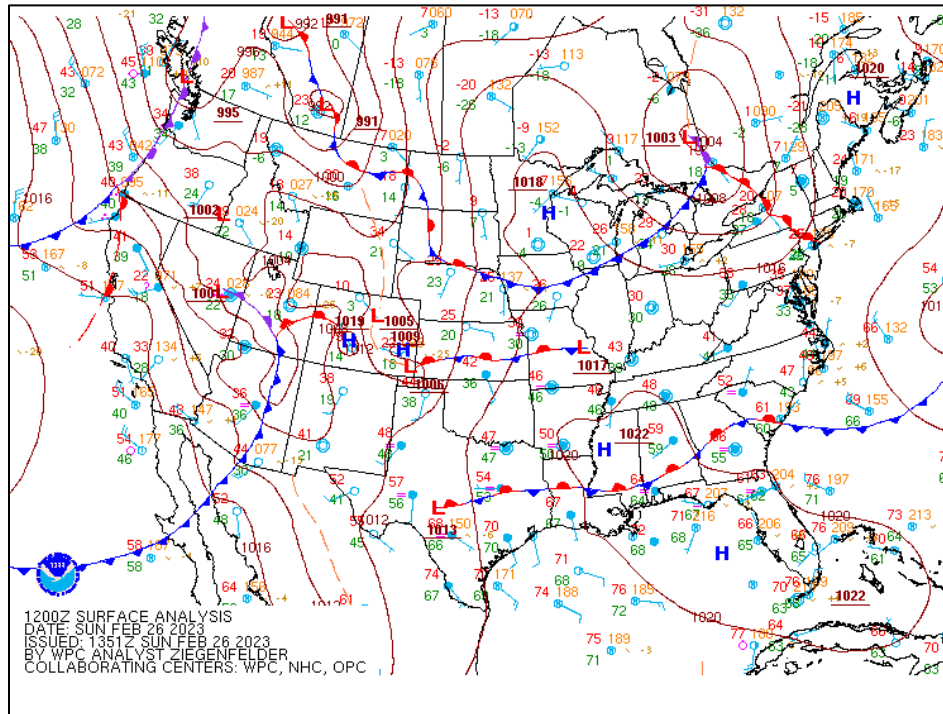


Figure A-9: National Weather Surface Weather Prediction Center (February 26, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST

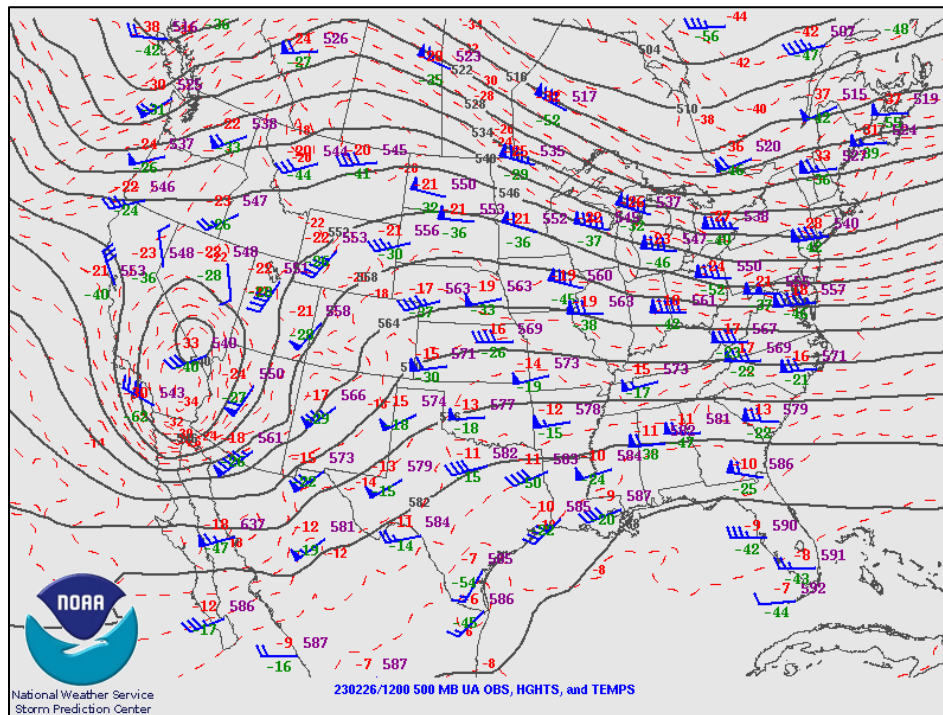
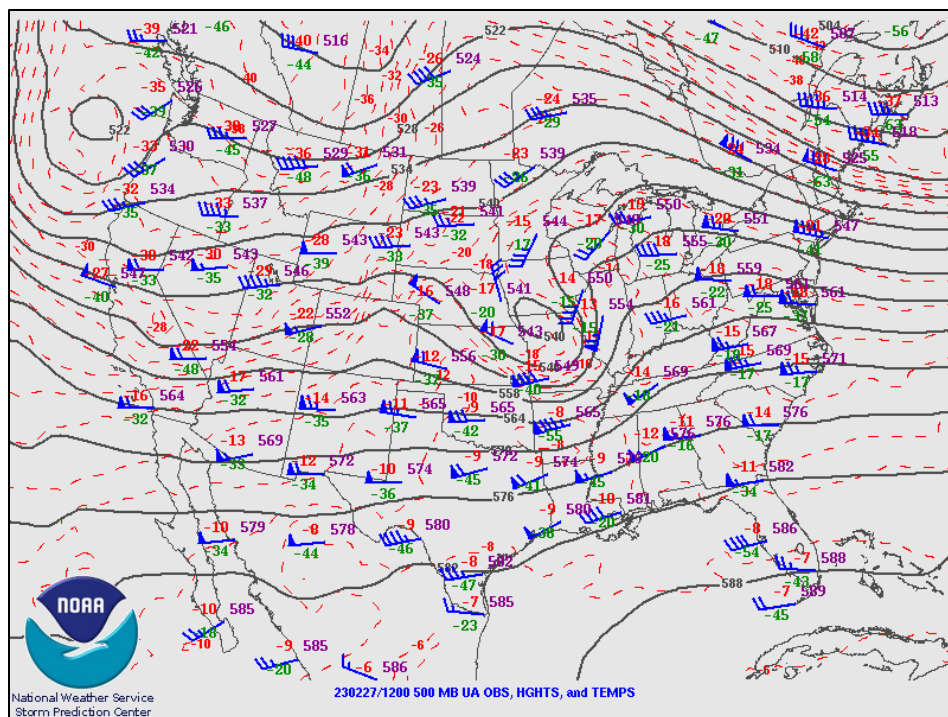
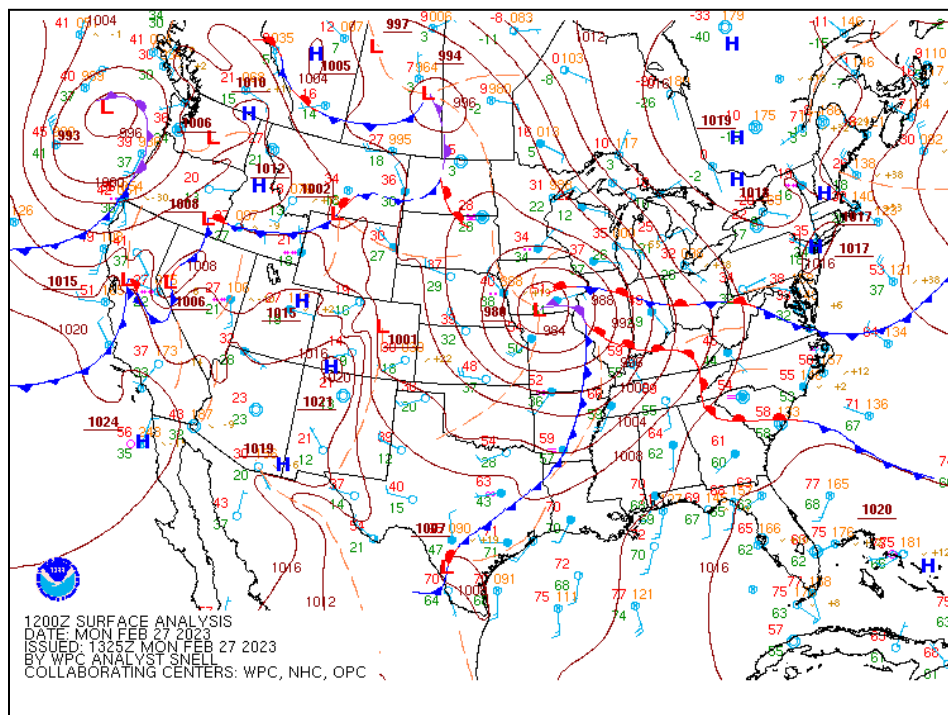


Figure A-10: National Weather Service Storm Prediction Center (February 26, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST



**Figure A-11: National Weather Service Storm Prediction Center (February 27, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST**



**Figure A-12: National Weather Surface Weather Prediction Center (February 27, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST**



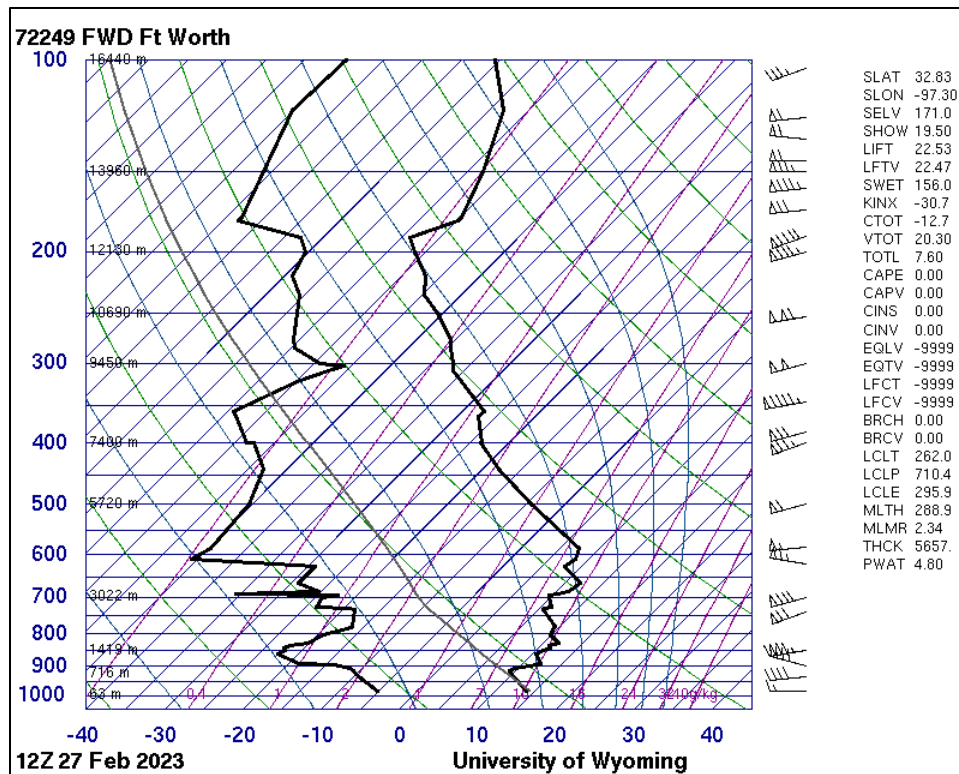


Figure A-13: Upper Air Sounding Chart from Fort Worth, Texas on February 27, 2023, at (12Z) 6:00 a.m. CST

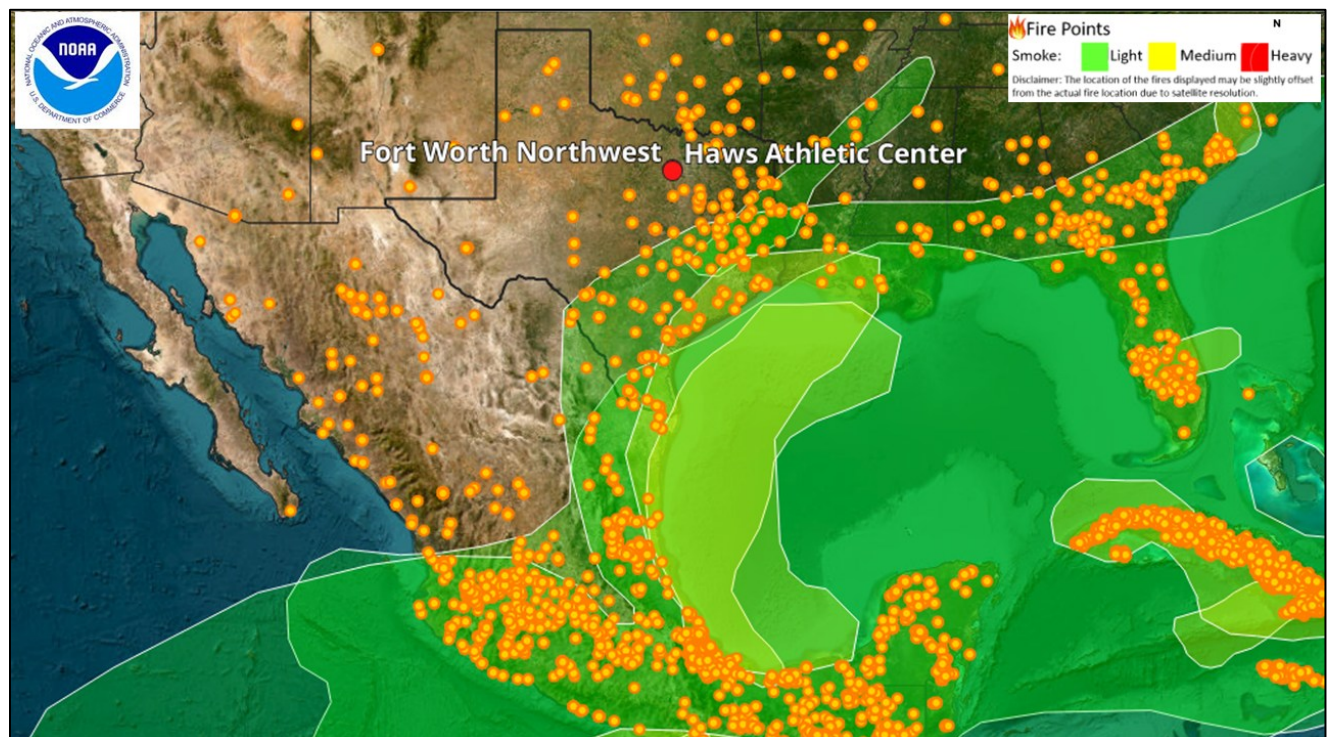


Figure A-14: NOAA HMS Fire and Smoke Map on February 27, 2023



### A.3: GROUP 3 – MARCH 1 AND MARCH 2, 2023

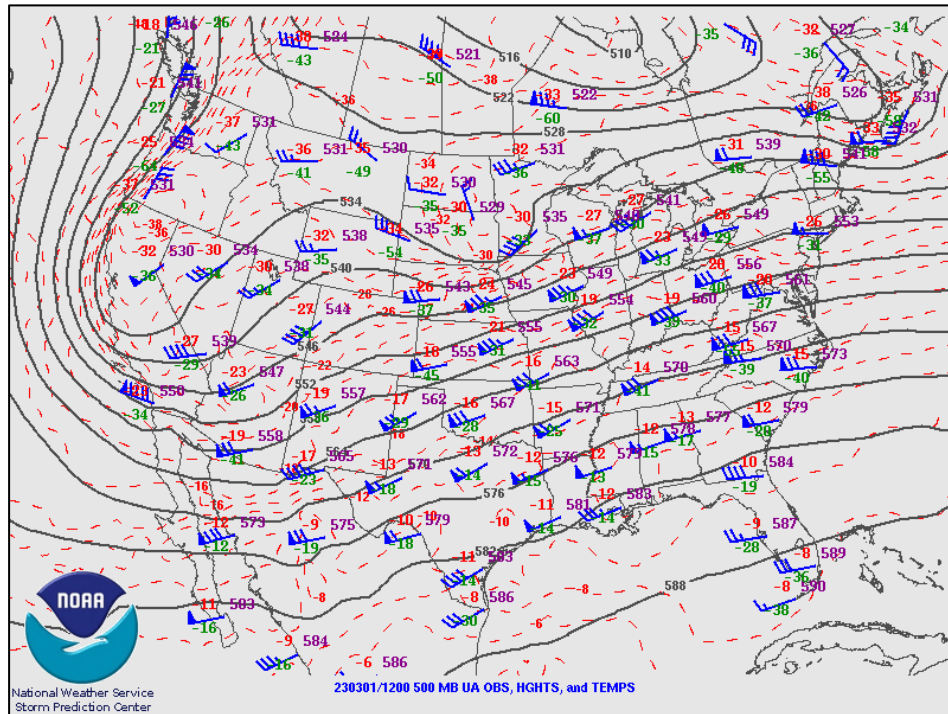


Figure A-15: National Weather Service Storm Prediction Center (March 1, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST

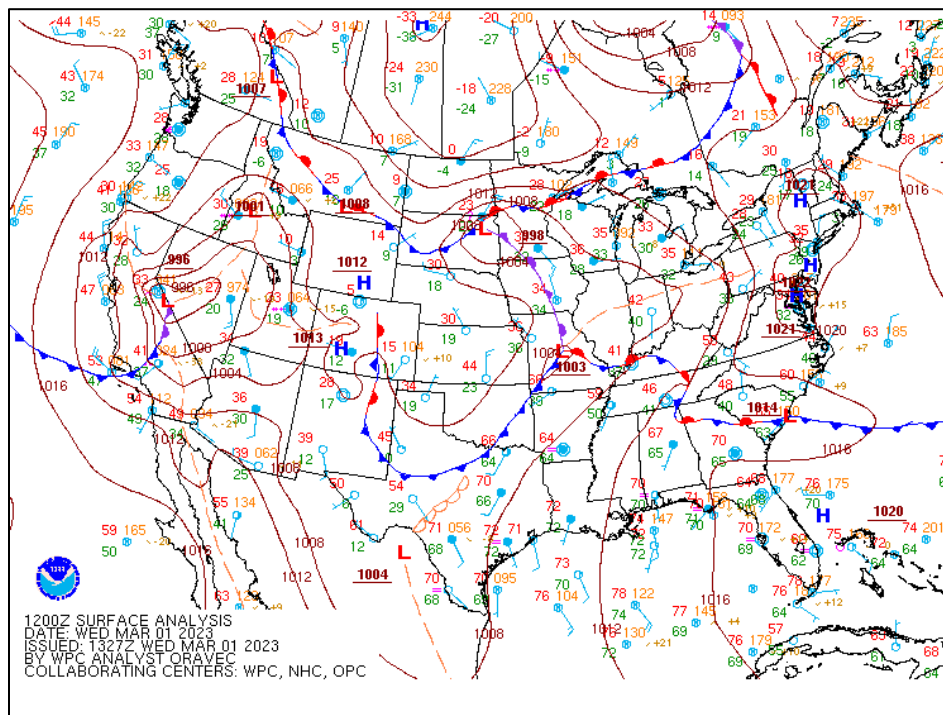


Figure A-16: National Weather Service Surface Weather Prediction Center (March 1, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST

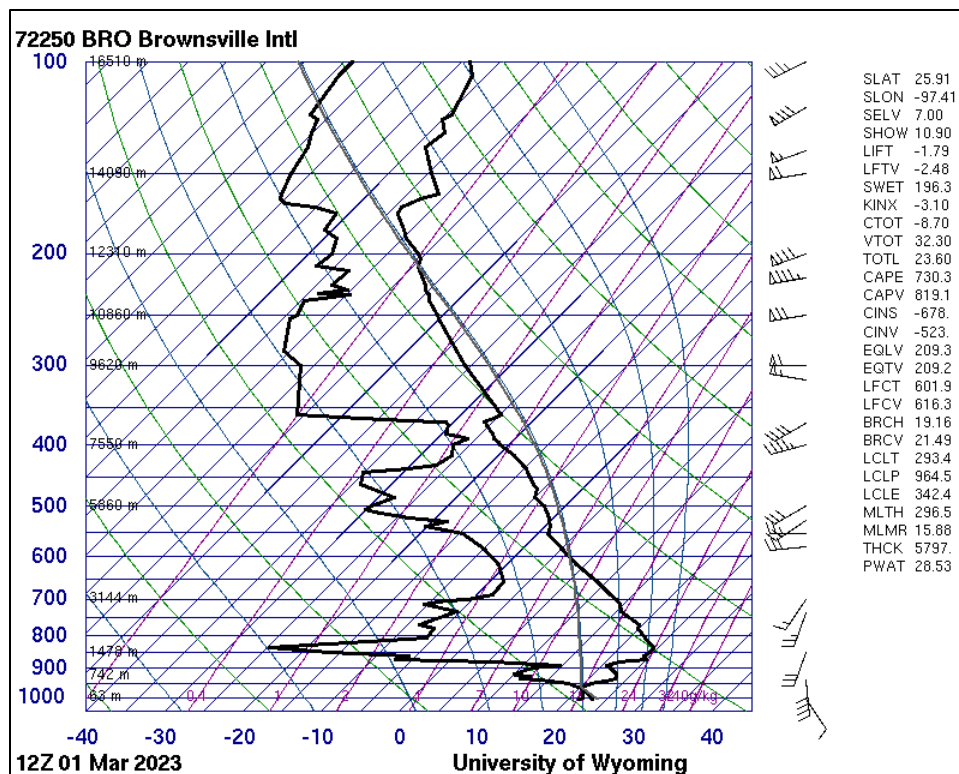


Figure A-17: Upper Air Sounding Chart from Brownsville, Texas on March 1, 2023, at (12Z) 6:00 a.m. CST

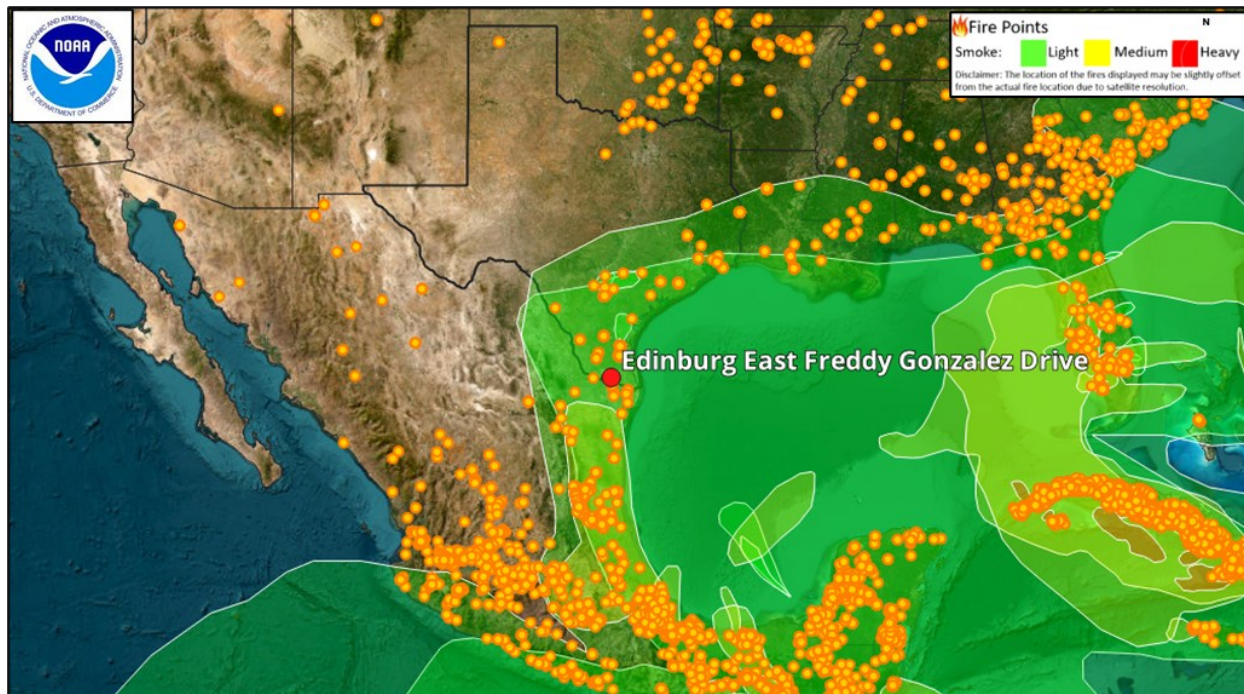
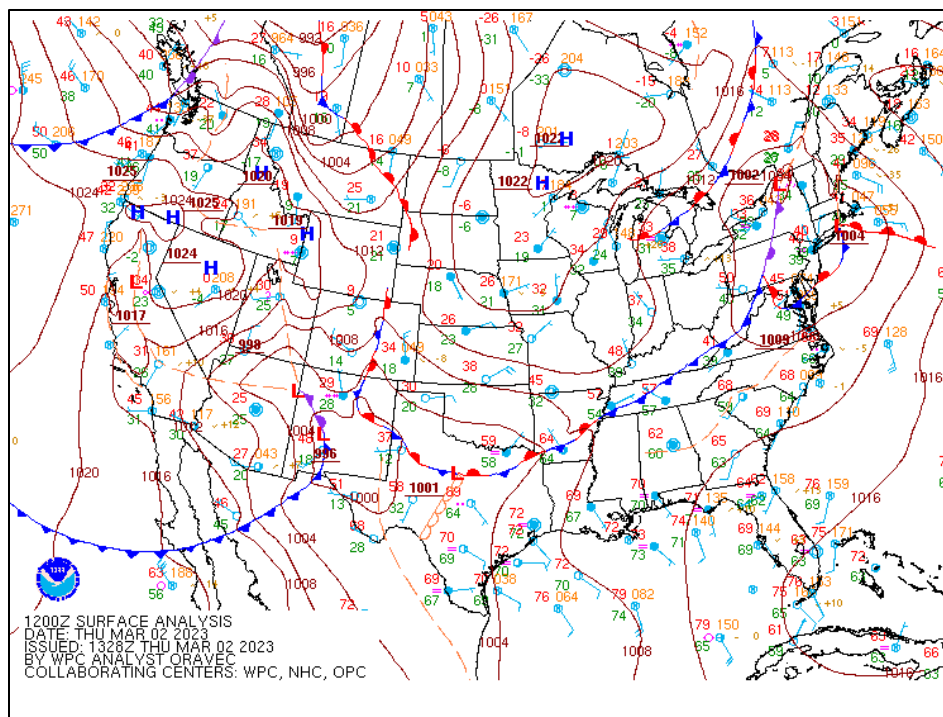
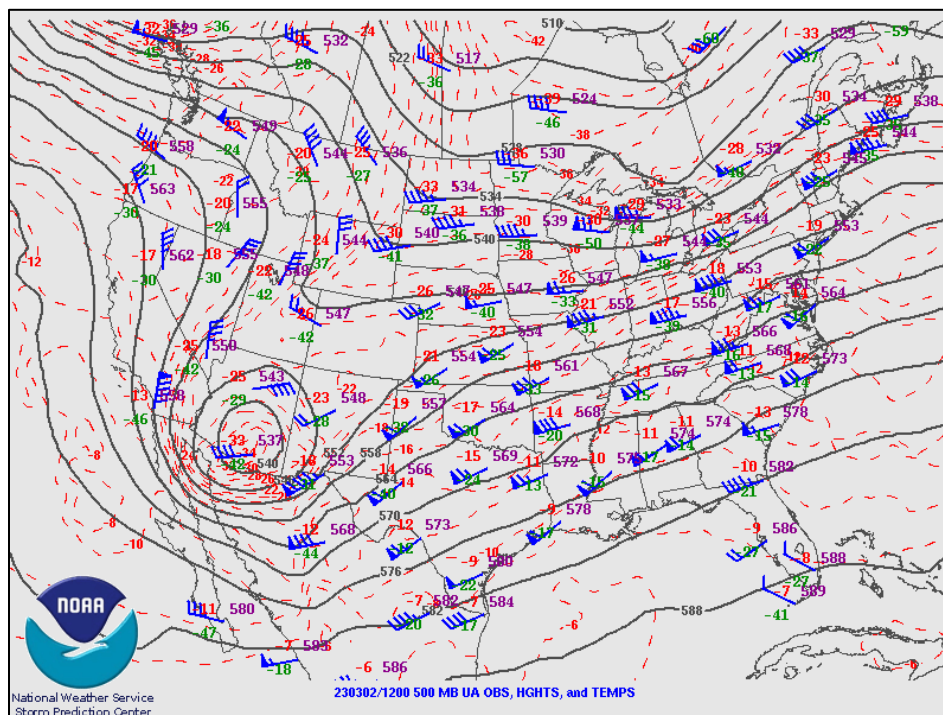


Figure A-18: NOAA HMS Fire and Smoke Map on March 1, 2023



**Figure A-19: National Weather Surface Weather Prediction Center (March 2, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST**



**Figure A-20: National Weather Service Storm Prediction Center (March 2, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST**



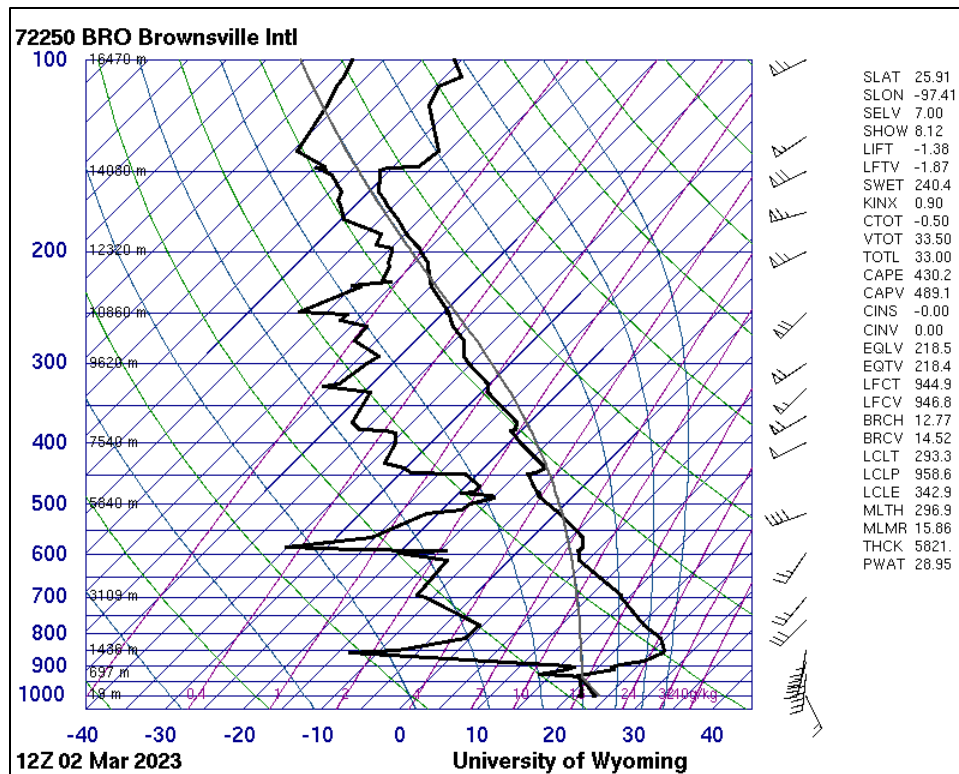


Figure A-21: Upper Air Sounding Chart from Brownsville, Texas on March 2, 2023, at (12Z) 6:00 a.m. CST

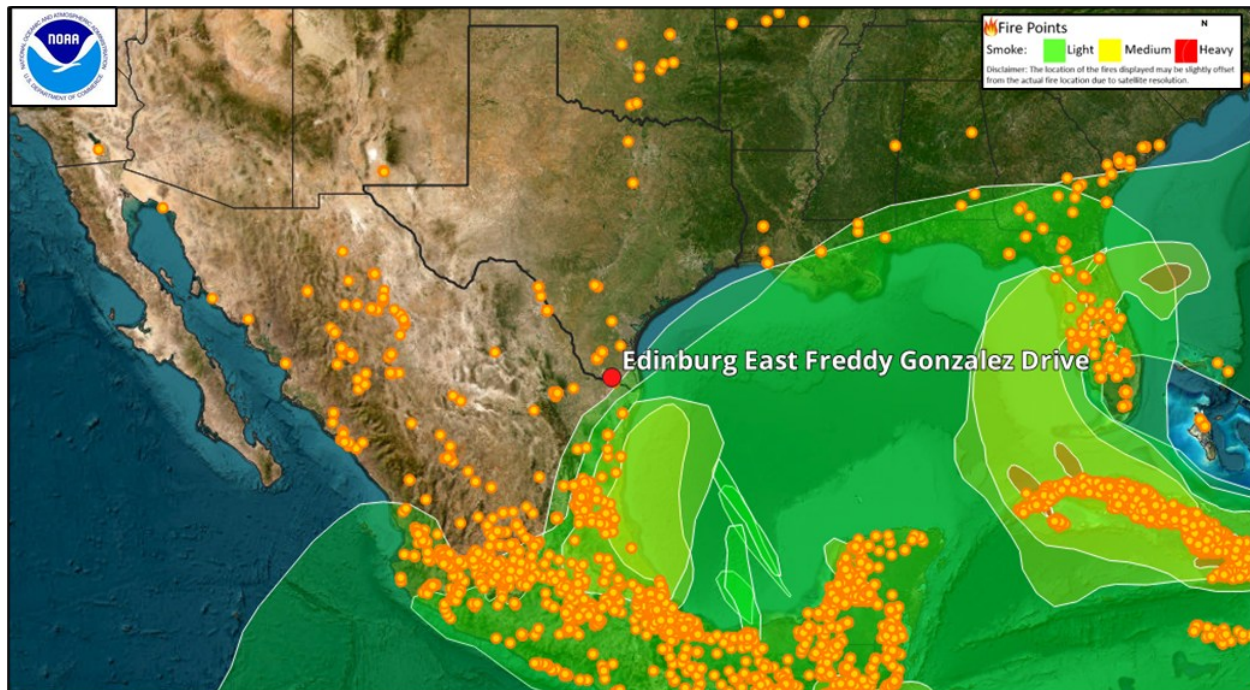


Figure A-22: NOAA HMS Fire and Smoke Map on March 2, 2023

#### A.4: GROUP 4 - MARCH 27, 2023

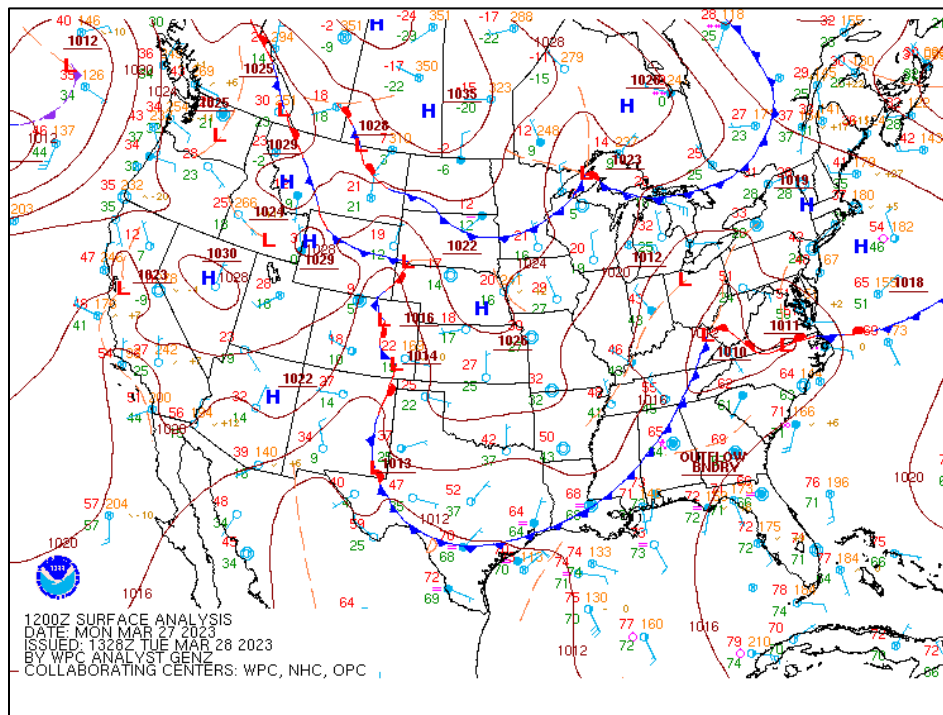


Figure A-23: National Weather Surface Weather Prediction Center (March 27, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST

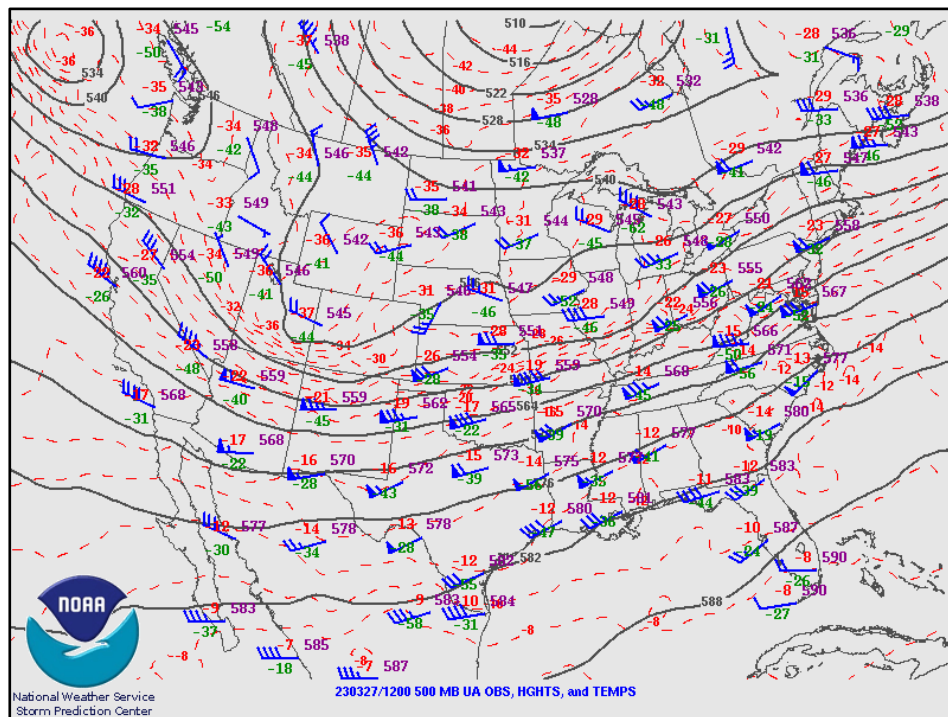


Figure A-24: National Weather Service Storm Prediction Center (March 27, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST



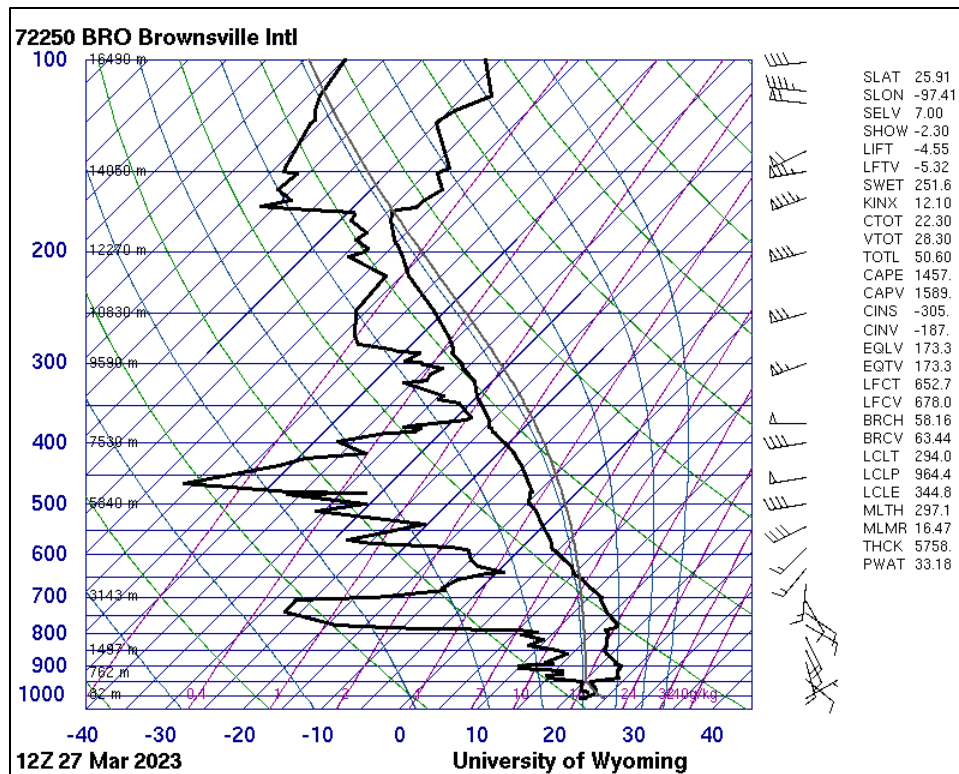


Figure A-25: Upper Air Sounding Chart from Brownsville, Texas on March 27, 2023, at (12Z) 6:00 a.m. CST

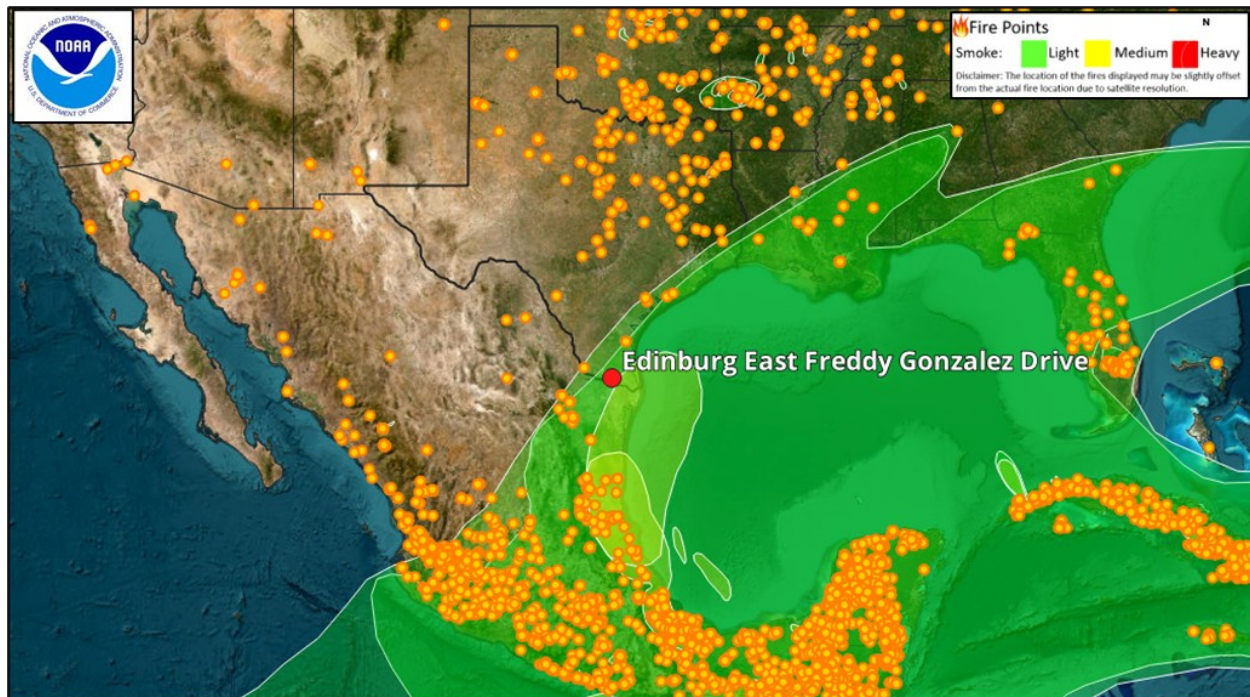


Figure A-26: NOAA HMS Fire and Smoke Map on March 27, 2023



## A.5: GROUP 5 – APRIL 4, 2023

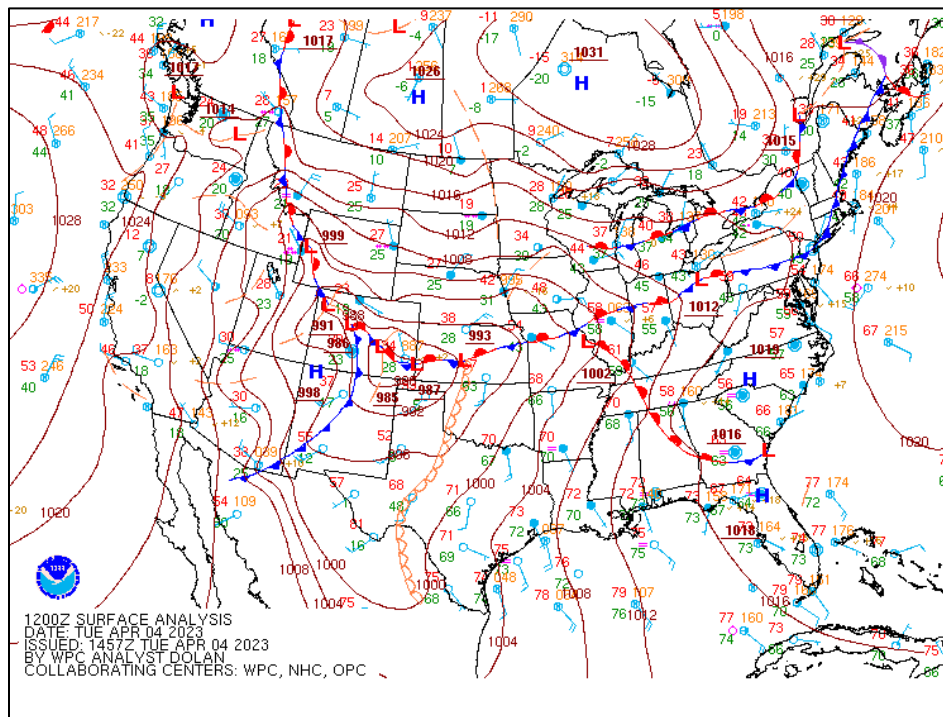


Figure A-27: National Weather Surface Weather Prediction Center (April 4, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST

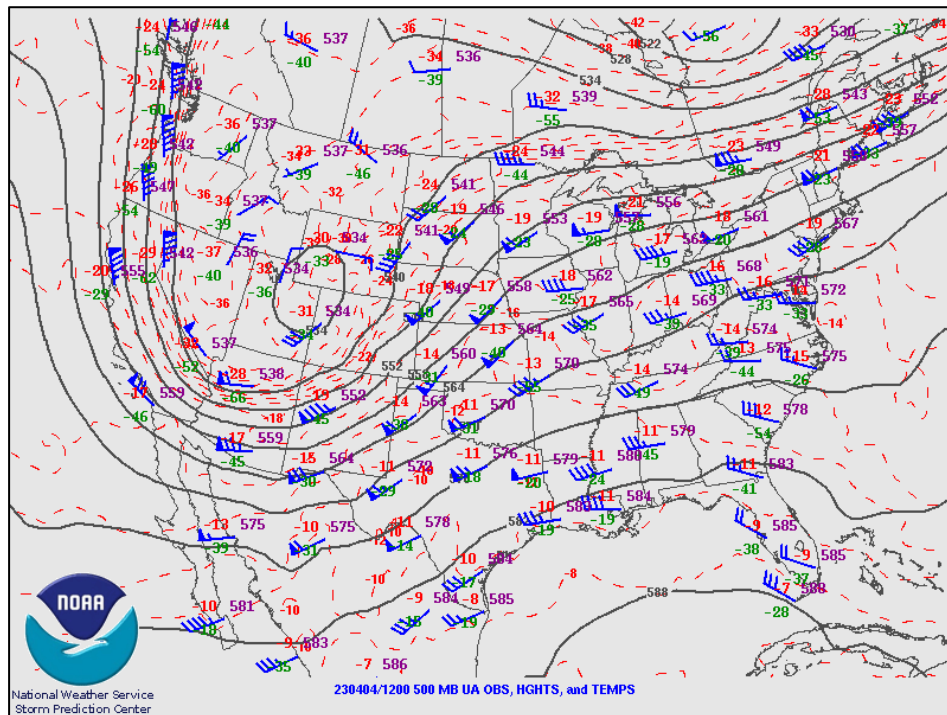


Figure A-28: National Weather Service Storm Prediction Center (April 4, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST

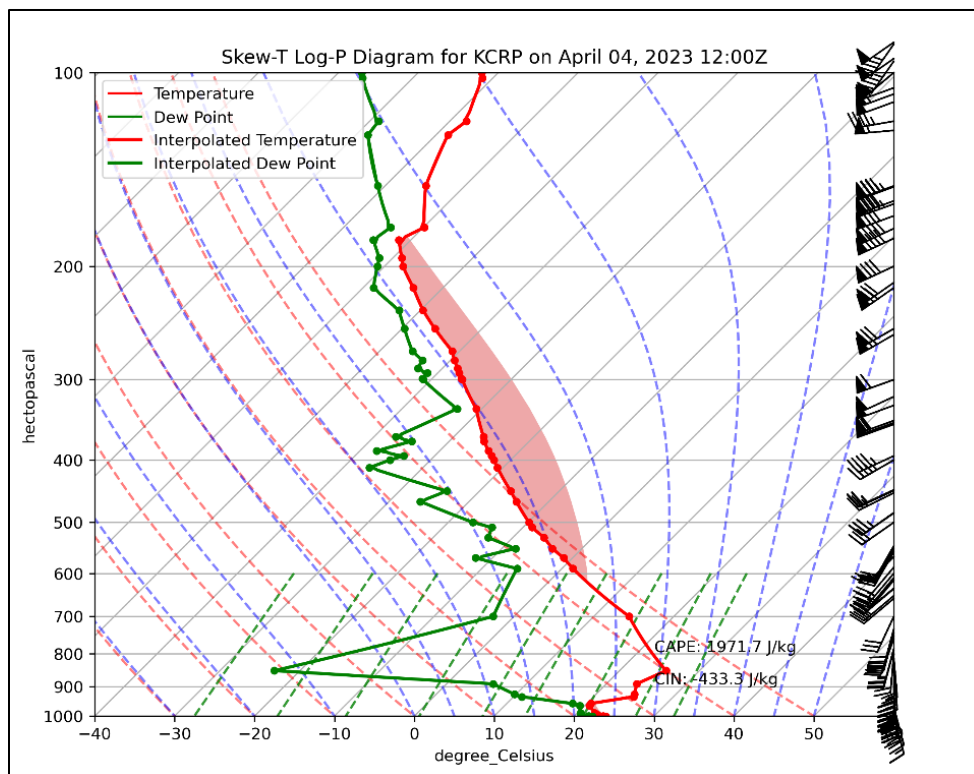


Figure A-29: Upper Air Sounding Chart from Corpus Christi, Texas on April 4, 2023, at (12Z) 6:00 a.m. CST

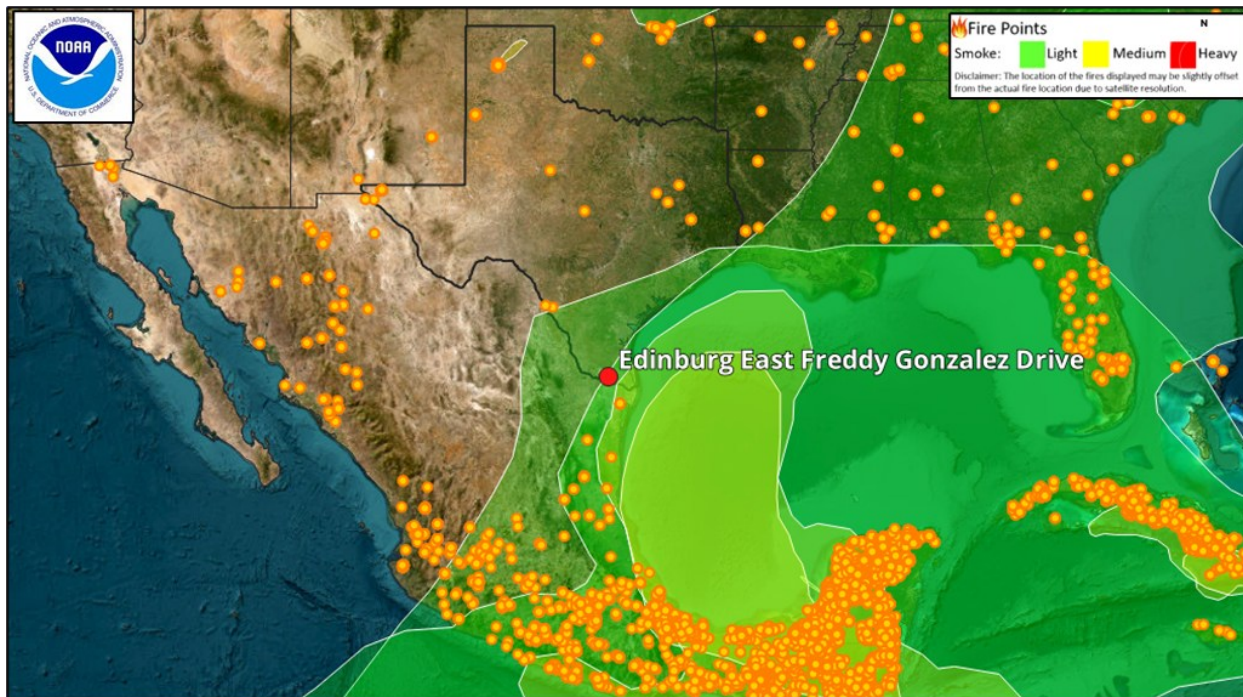
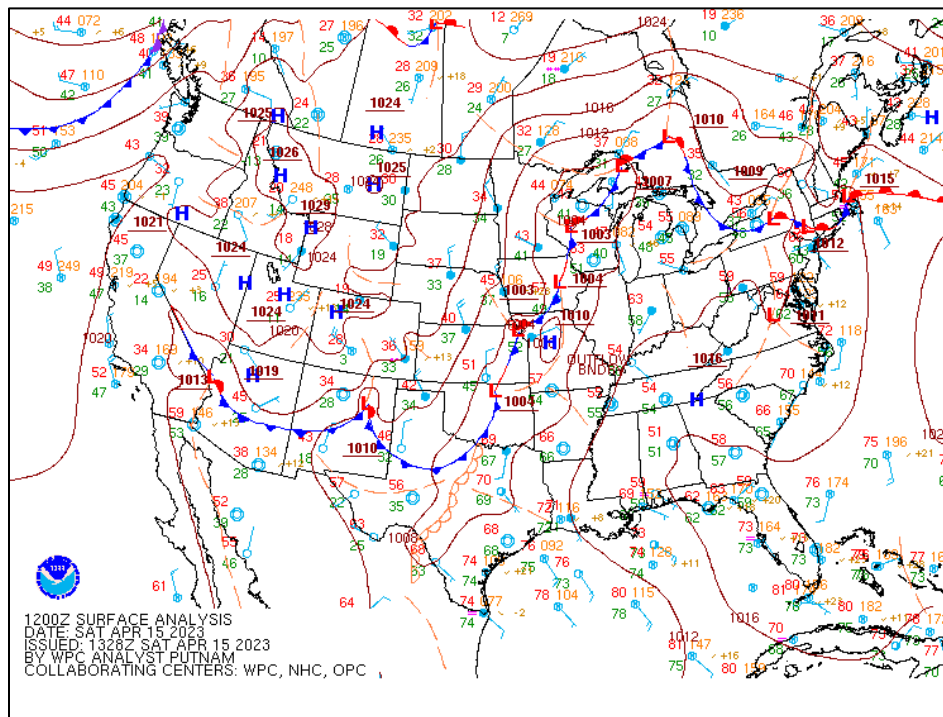
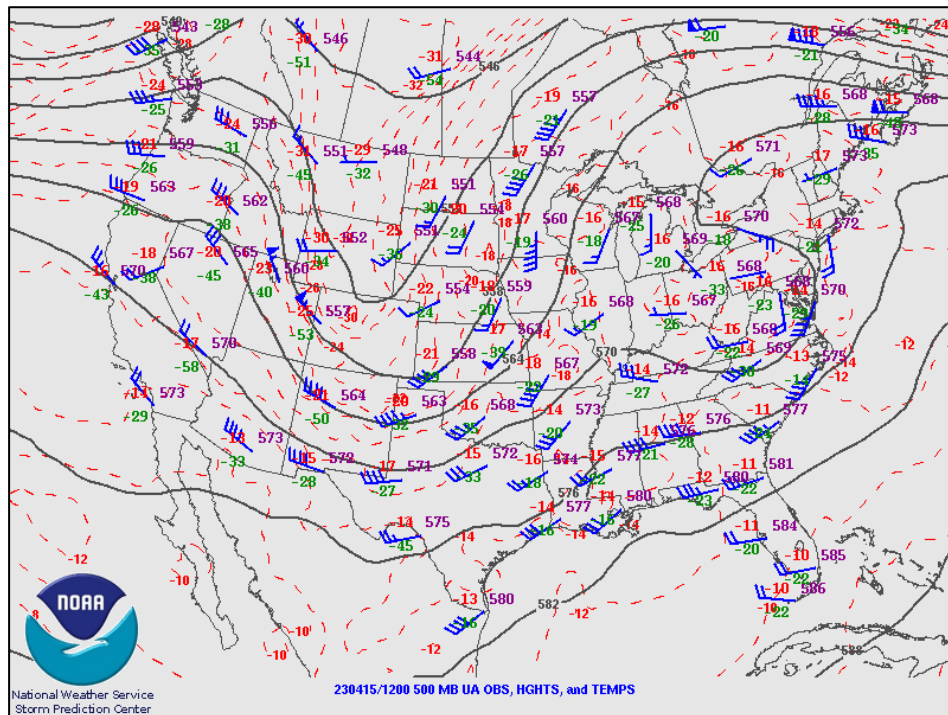


Figure A-30: NOAA HMS Fire and Smoke Map on April 4, 2023

## A.6: GROUP 6 – APRIL 15, 2023



**Figure A-31: National Weather Surface Weather Prediction Center (April 15, 2023) CONUS Surface Analysis (12Z), 6:00 a.m. CST**



**Figure A-32: National Weather Service Storm Prediction Center (April 15, 2023) 500 mb Analysis (12Z) 6:00 a.m. CST**



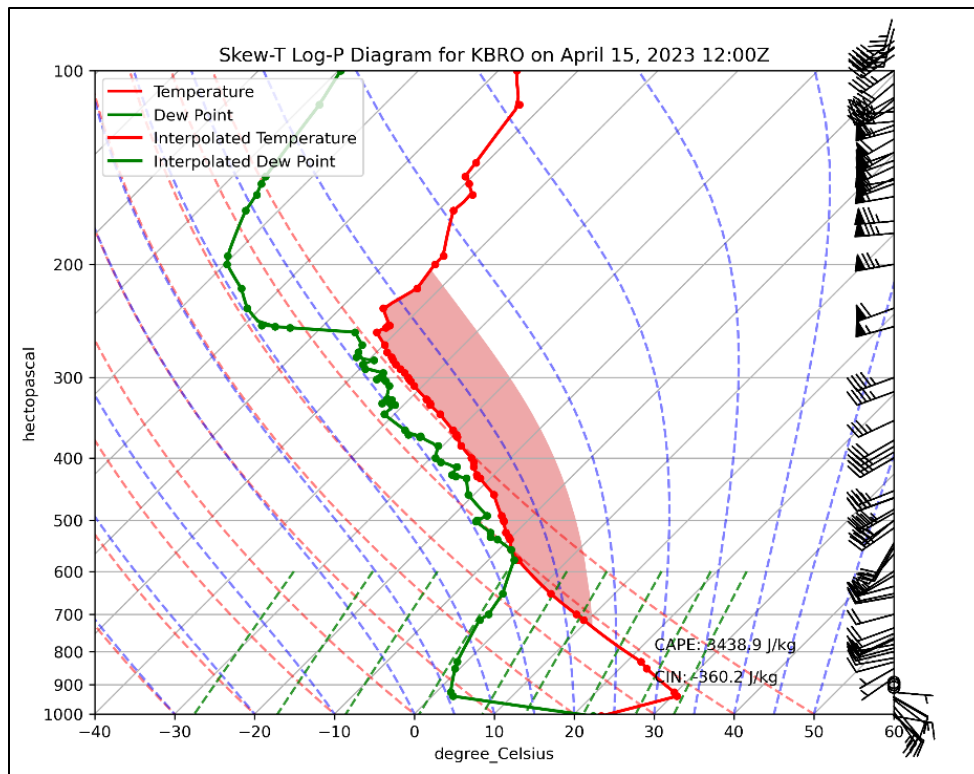


Figure A-33: Upper Air Sounding Chart from Brownsville, Texas on April 15, 2023, at (12Z) 6:00 a.m. CST

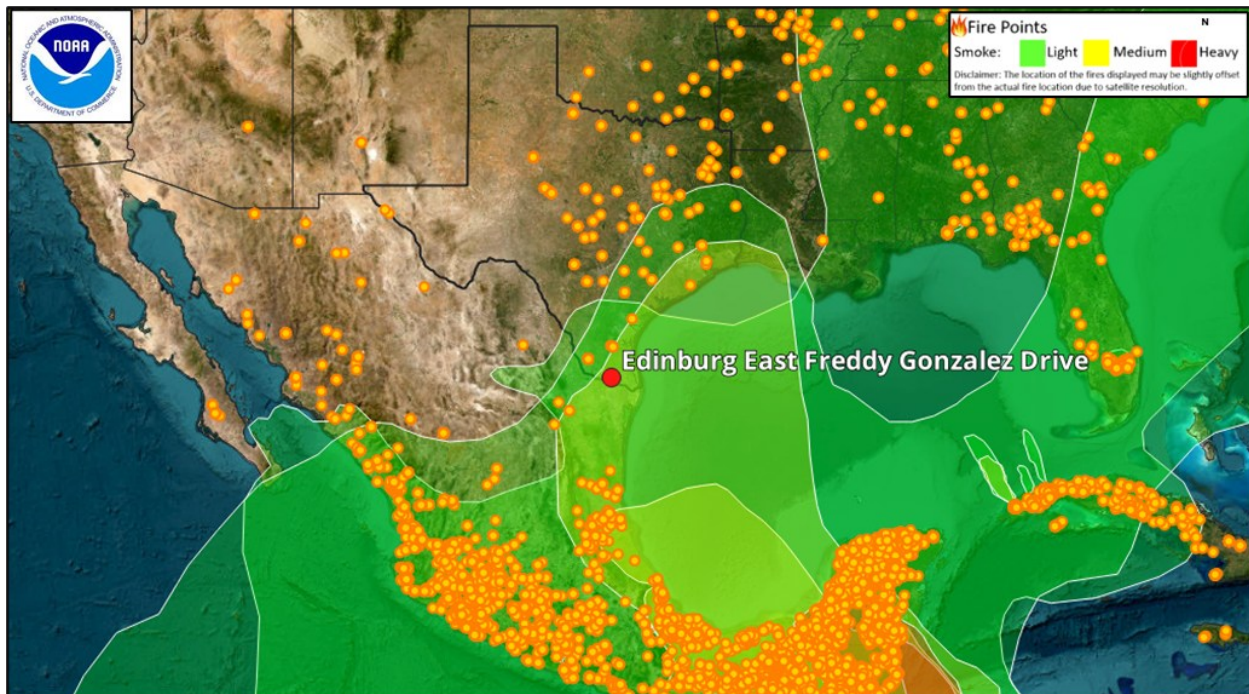


Figure A-34: NOAA HMS Fire and Smoke Map on April 15, 2023

A.7: GROUP 7 – MAY 5 AND MAY 6, 2023

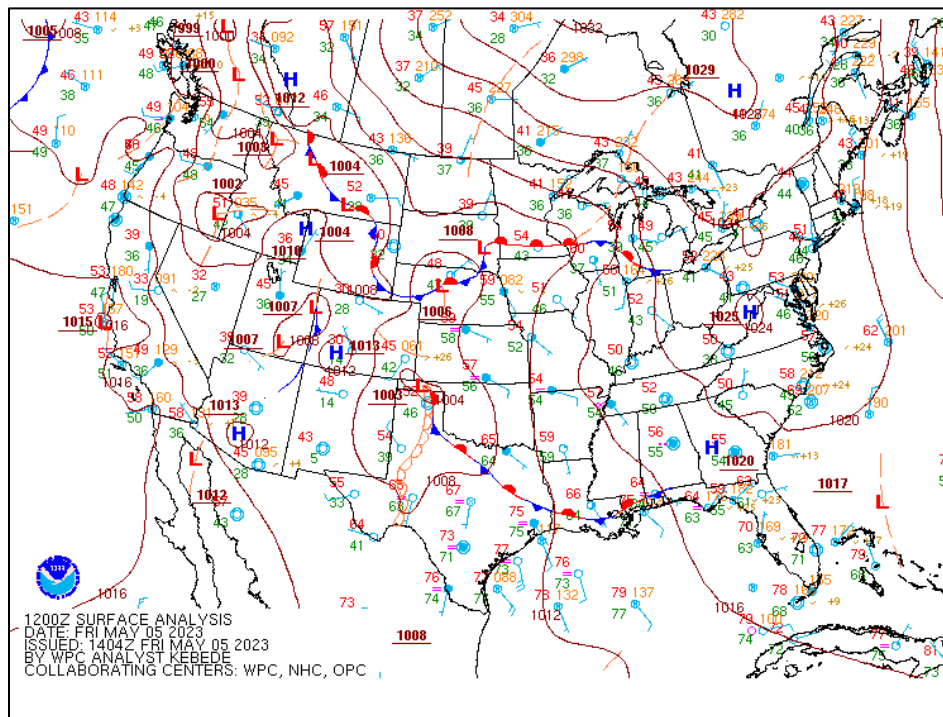


Figure A-35: National Weather Surface Weather Prediction Center (May 5, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT

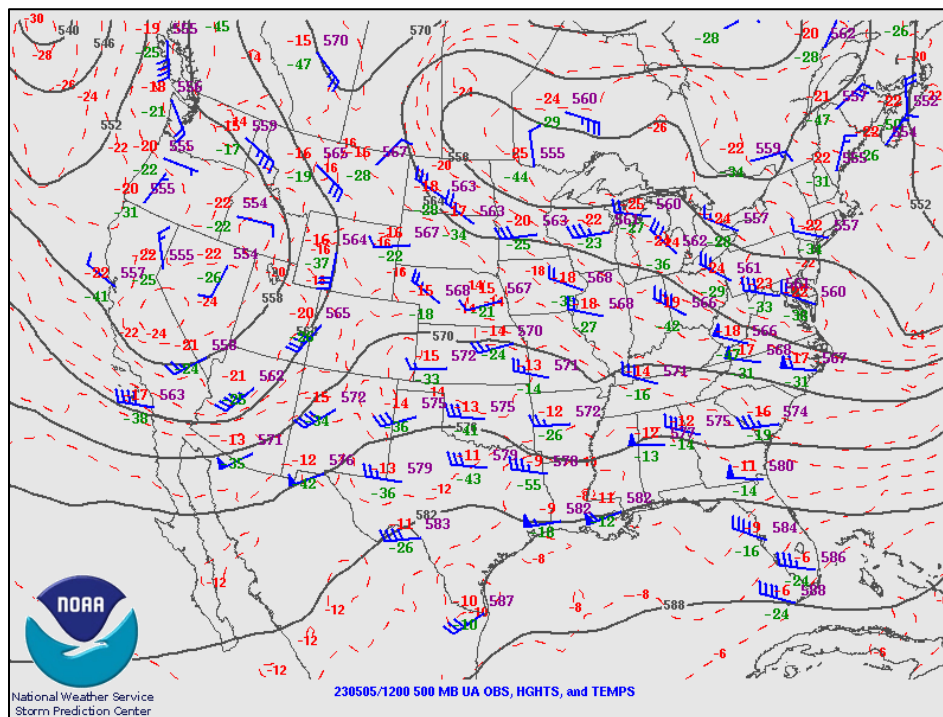


Figure A-36: National Weather Service Storm Prediction Center (May 5, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT



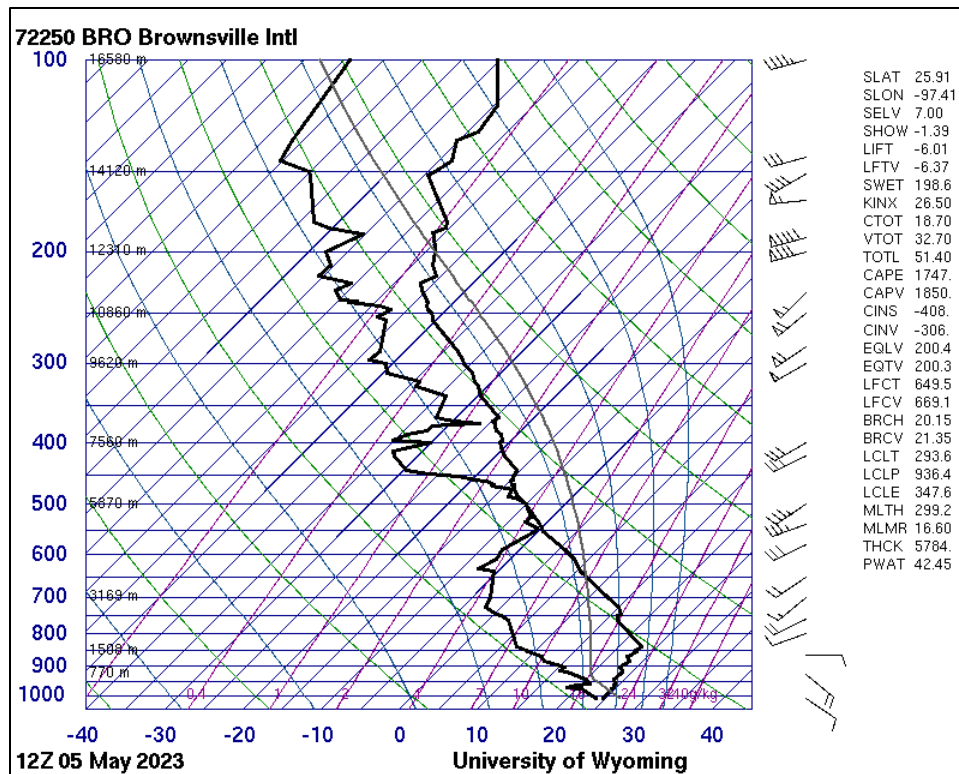


Figure A-37: Upper Air Sounding Chart from Corpus Christi, Texas on May 5, 2023, at 7:00 a.m. CDT

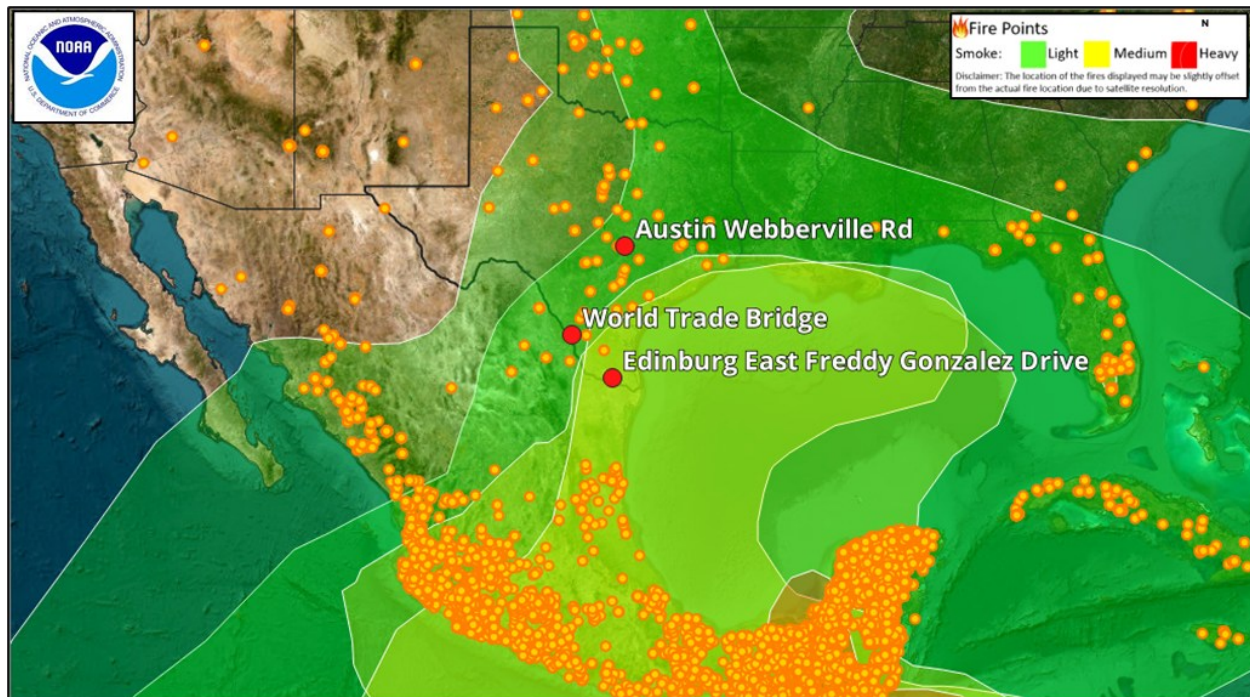
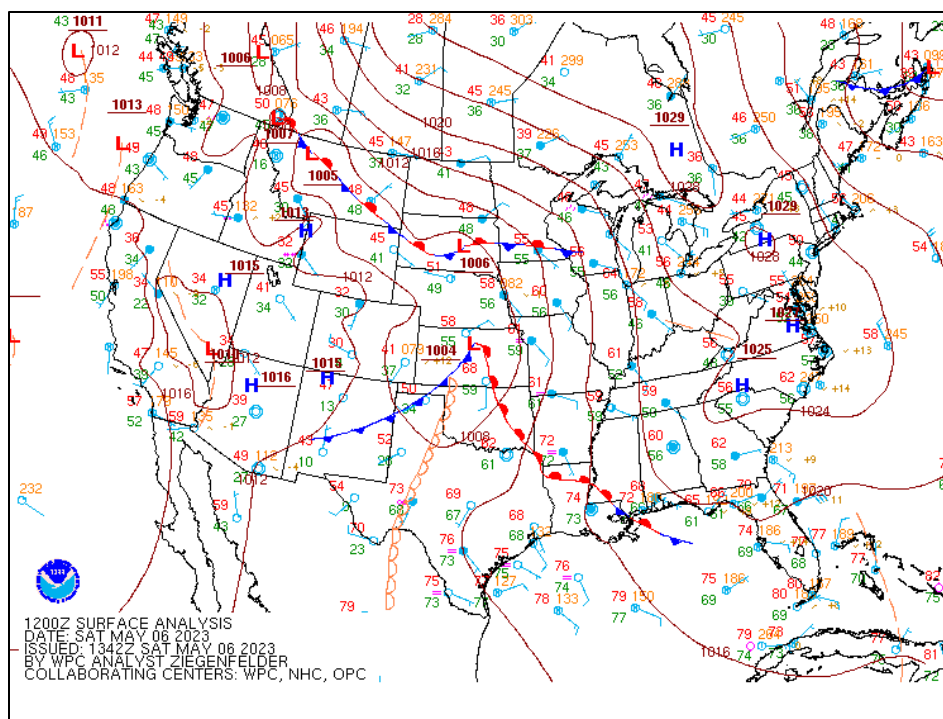
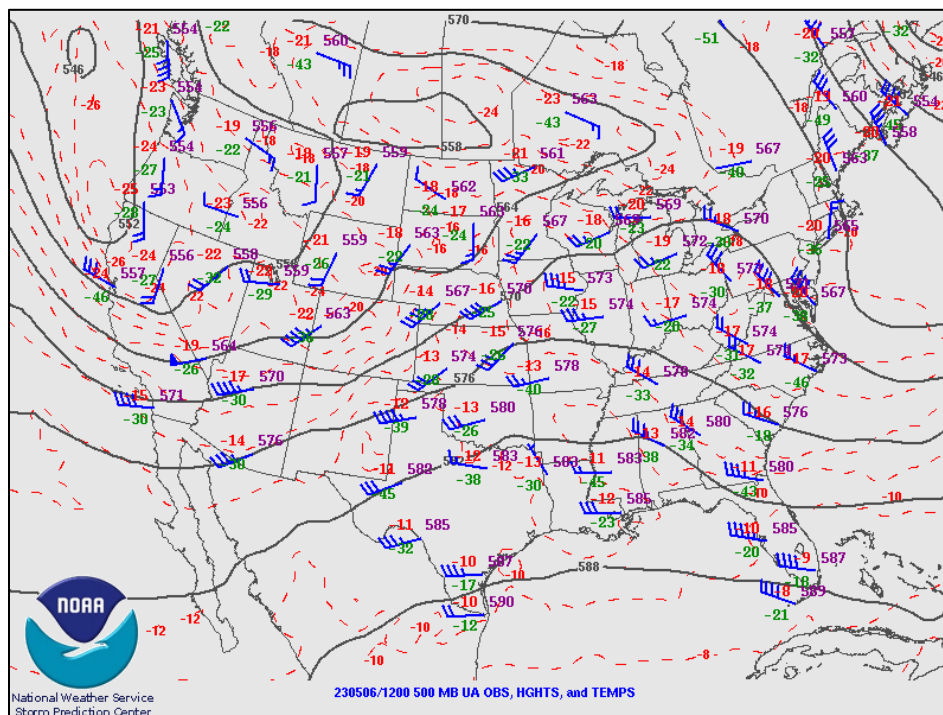


Figure A-38: NOAA HMS Fire and Smoke Map on May 5, 2023





**Figure A-39: National Weather Surface Weather Prediction Center (May 6, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT**



**Figure A-40: National Weather Service Storm Prediction Center (May 6, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT**

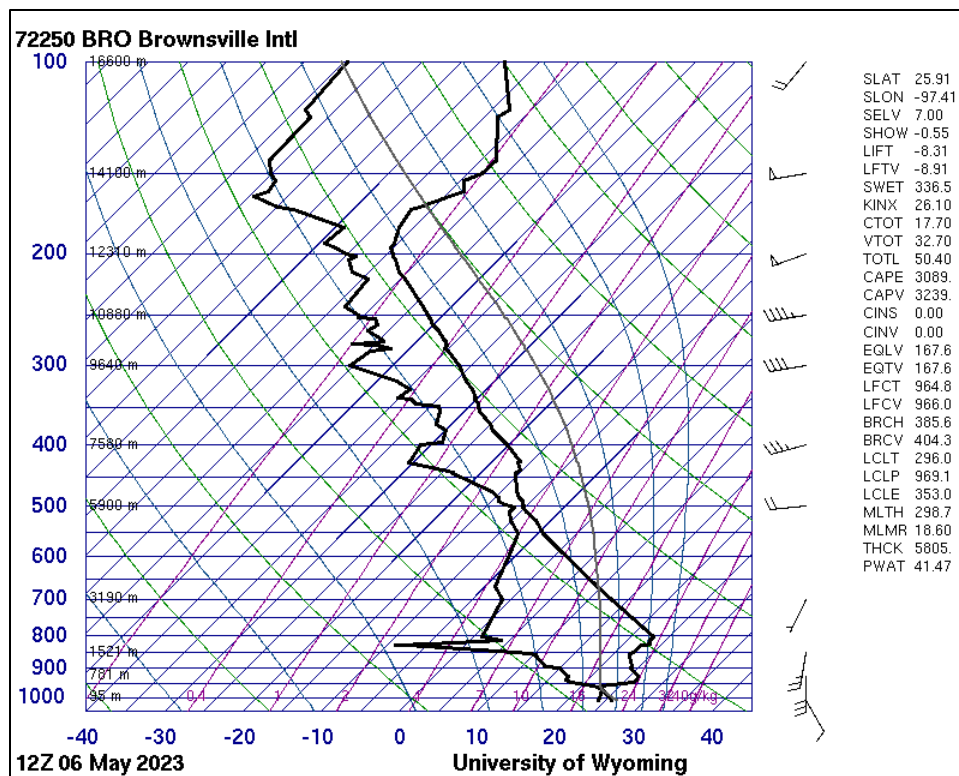


Figure A-41: Upper Air Sounding Chart from Brownsville, Texas on May 6, 2023, at (12Z) 7:00 a.m. CDT

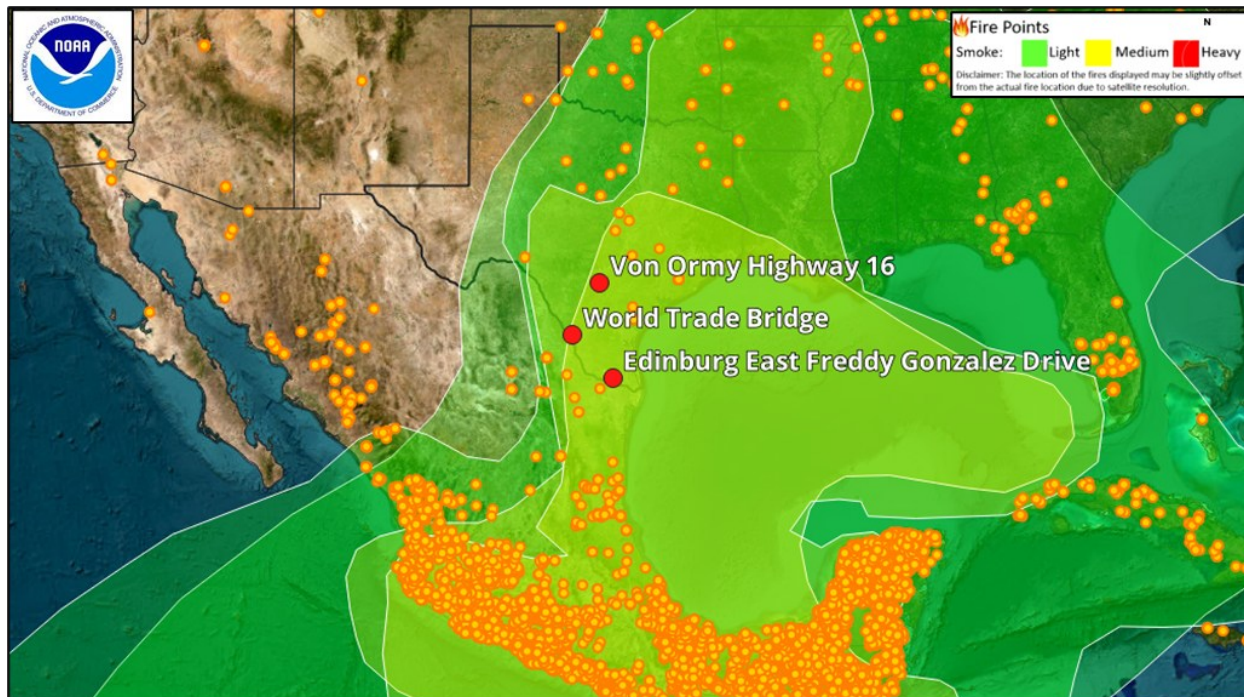


Figure A-42: NOAA HMS Fire and Smoke Map on May 6, 2023

## A.8: GROUP 8 – MAY 11 AND MAY 12, 2023

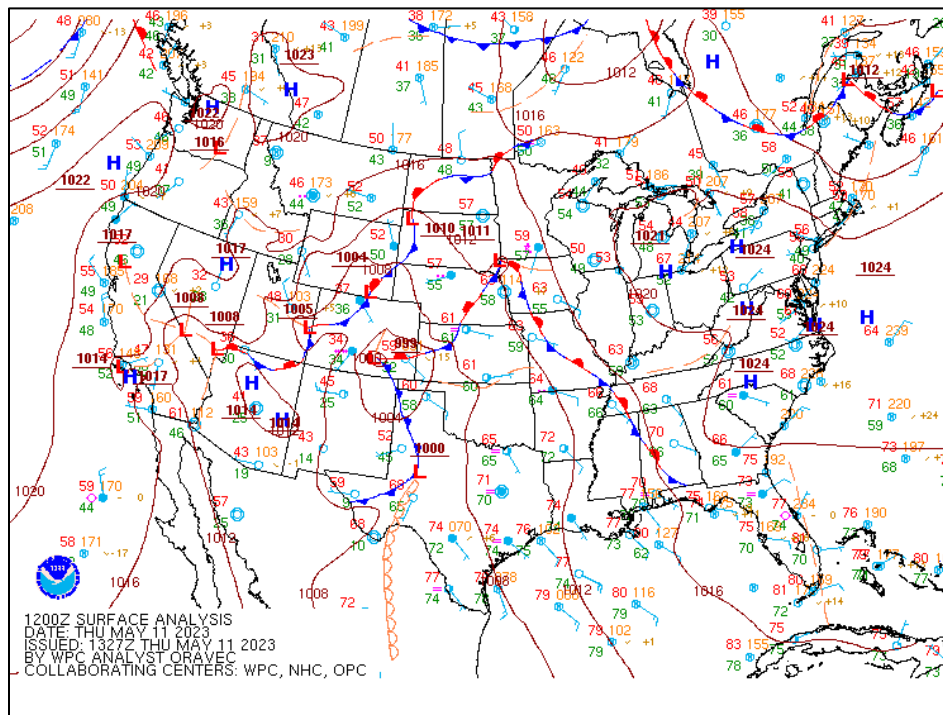


Figure A-43: National Weather Surface Weather Prediction Center (May 11, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT

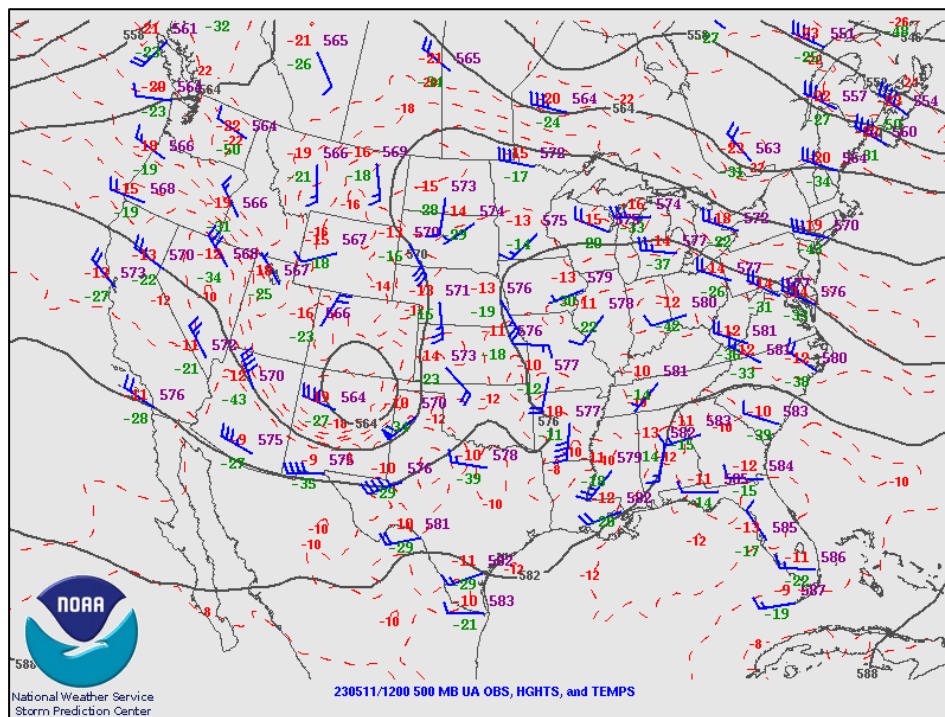


Figure A-44: National Weather Service Storm Prediction Center (May 11, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT



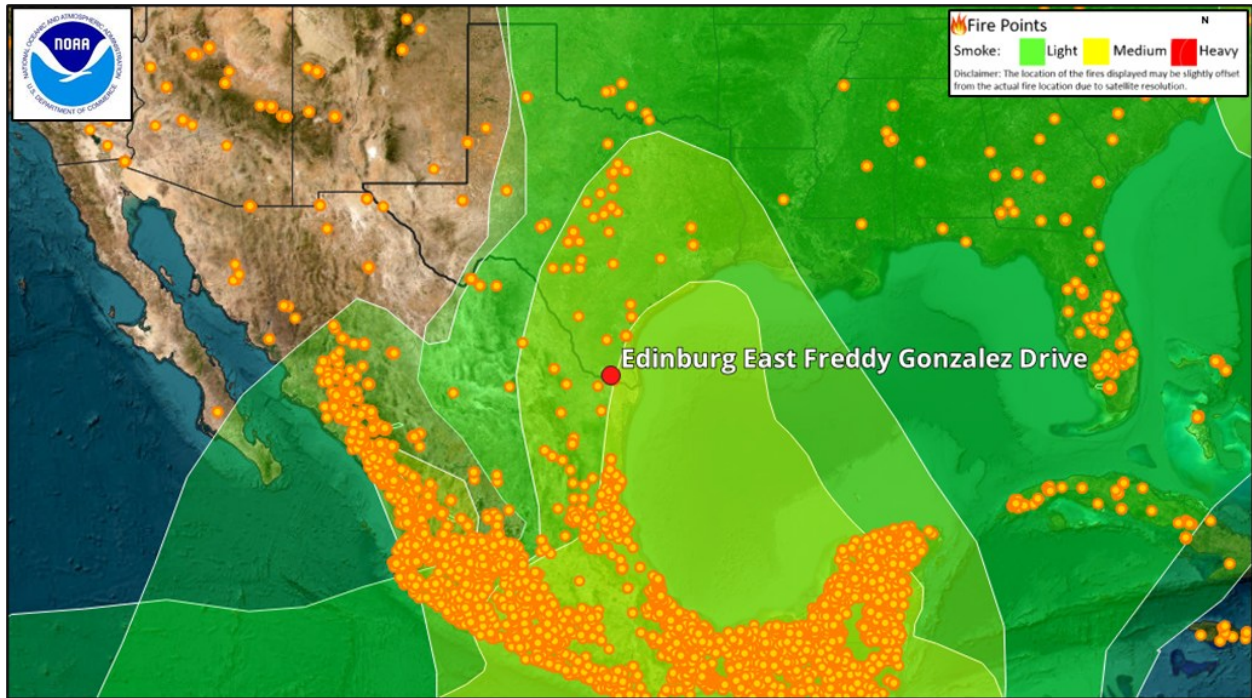


Figure A-45: NOAA HMS Fire and Smoke Map on May 11, 2023

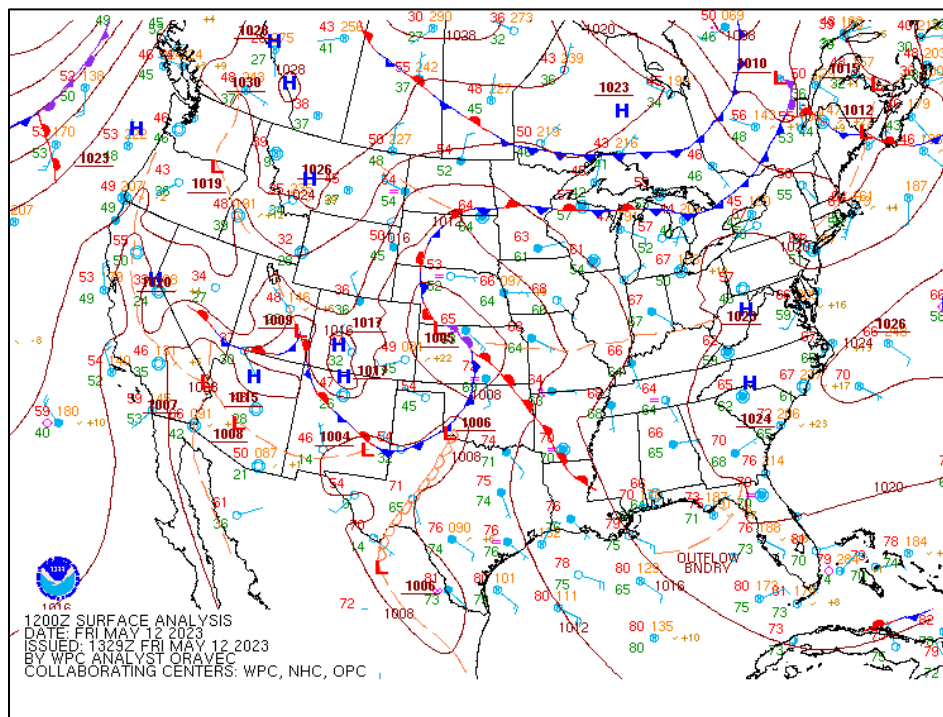


Figure A-46: National Weather Surface Weather Prediction Center (May 12, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT

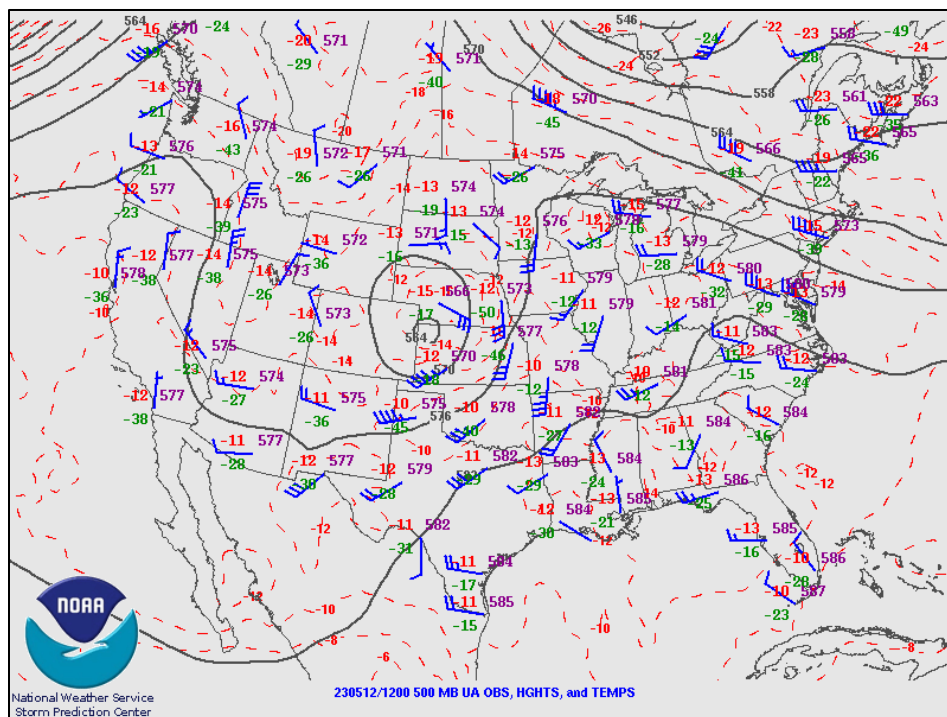


Figure A-47: National Weather Service Storm Prediction Center (May 12, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT

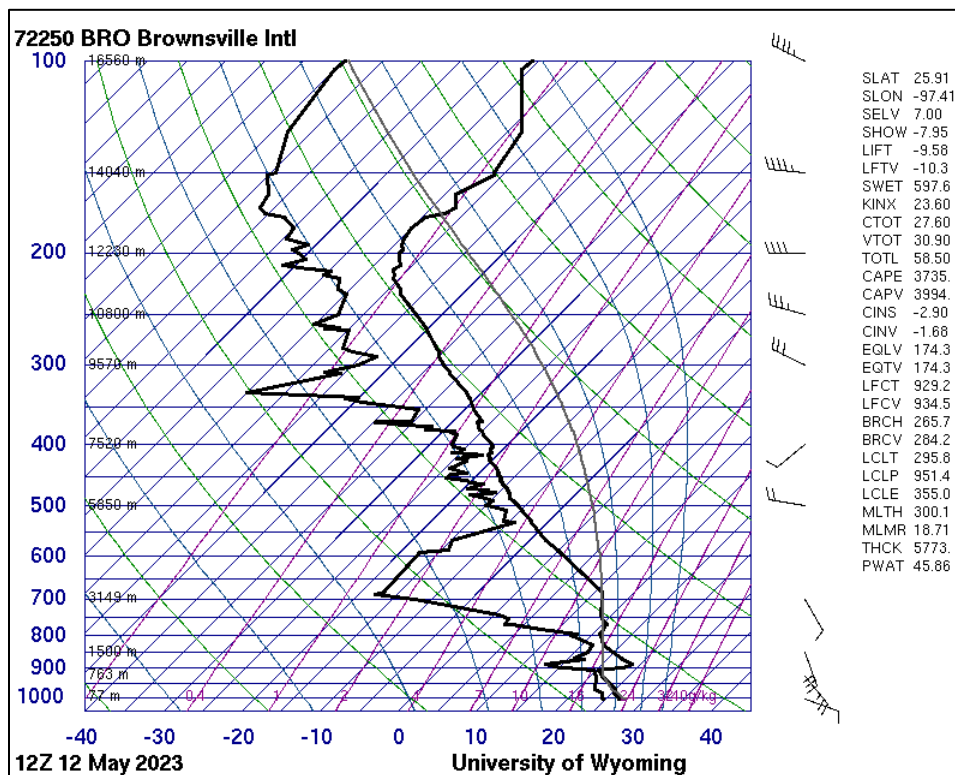
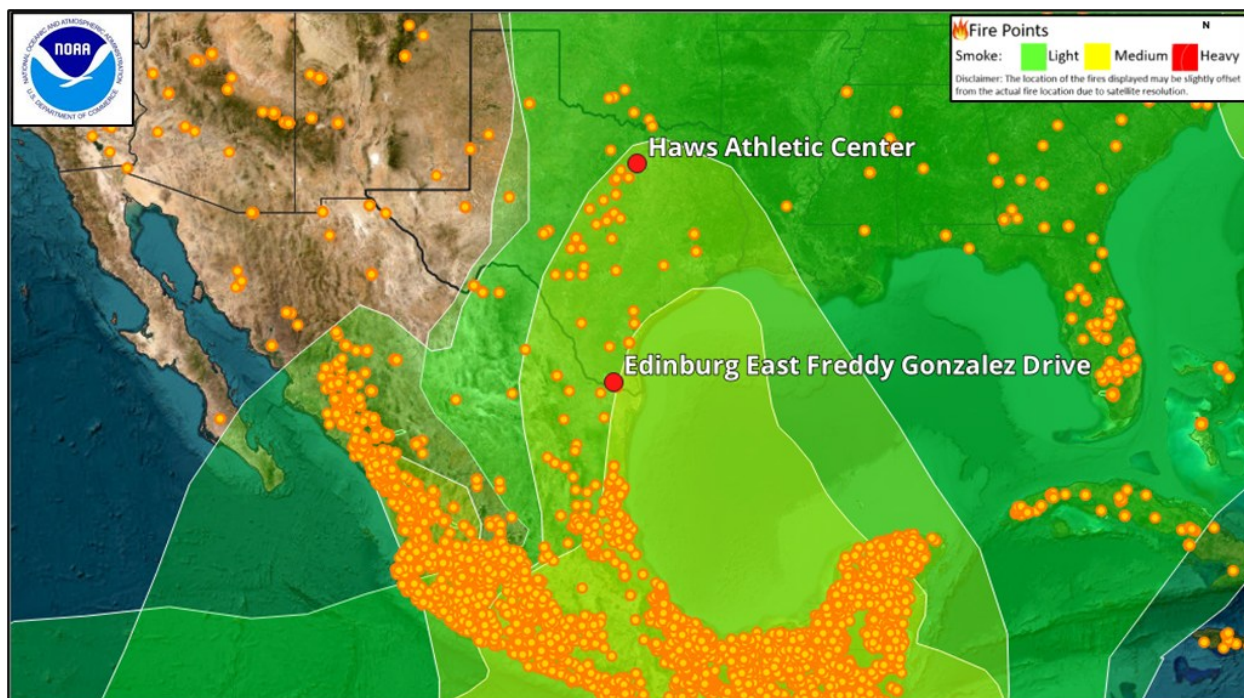
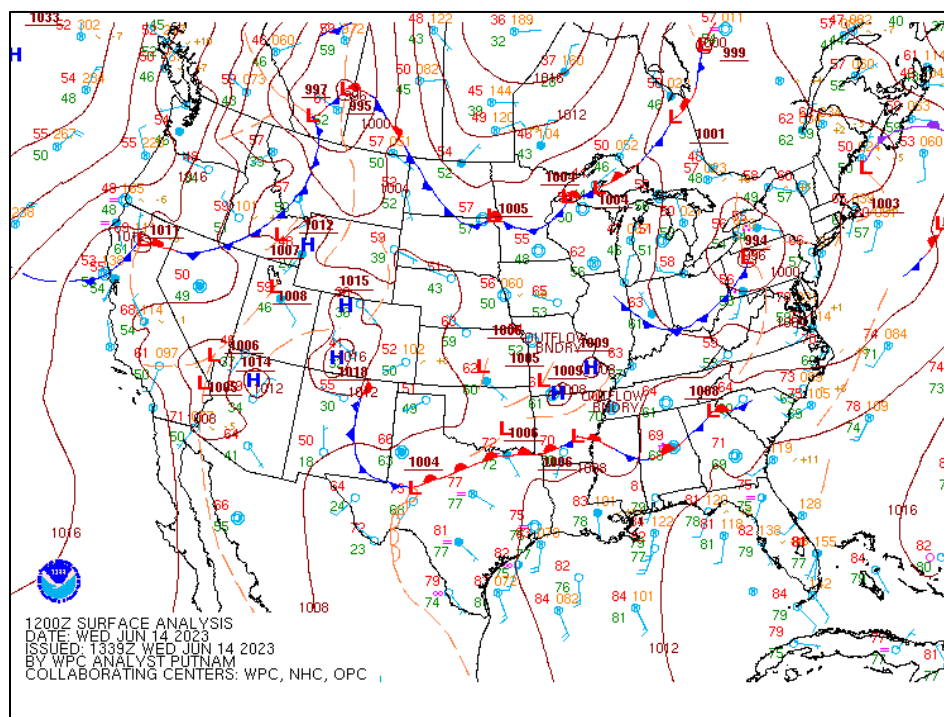


Figure A-48: Upper Air Sounding Chart from Brownsville, Texas on May 12, 2023, at (12Z) 7:00 a.m. CDT



### A.9: GROUP 9 – JUNE 14, JUNE 15, AND JUNE 16, 2023





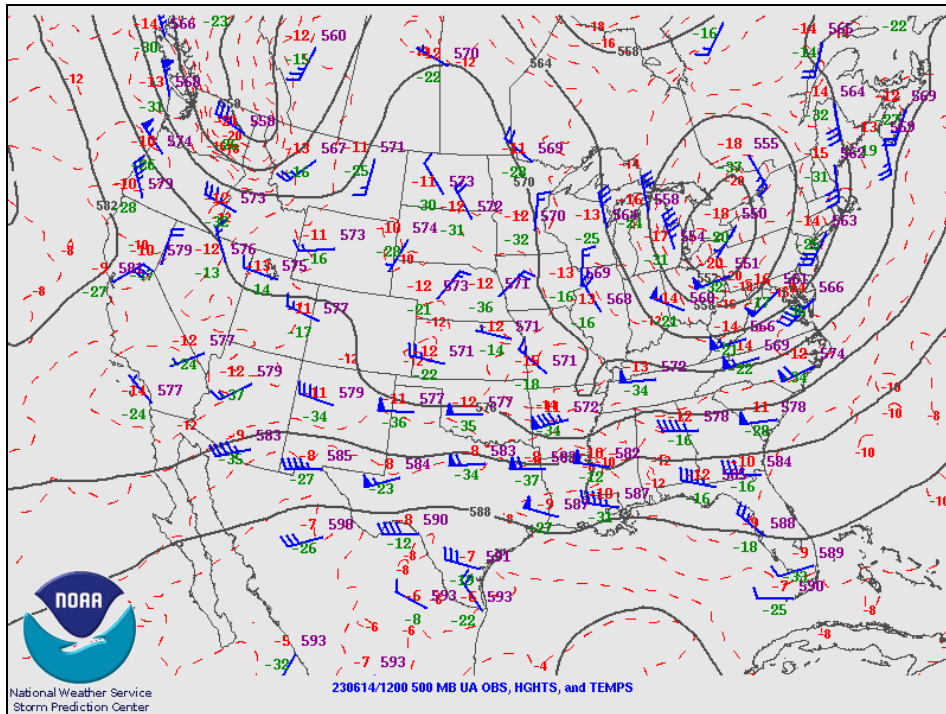


Figure A-51: National Weather Service Storm Prediction Center (June 14, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT

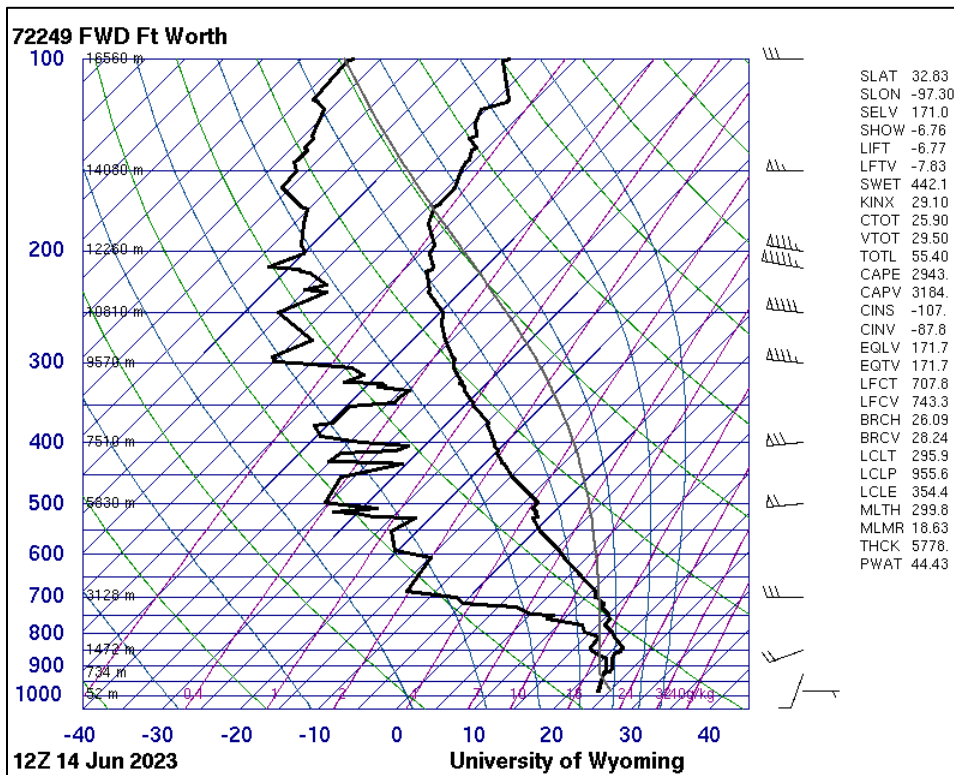
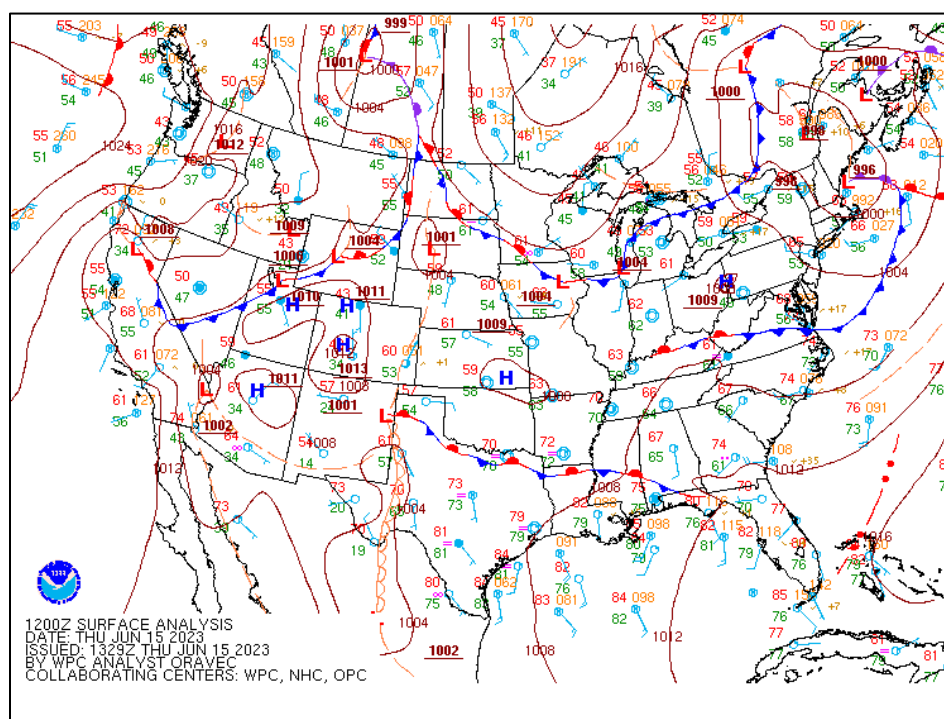
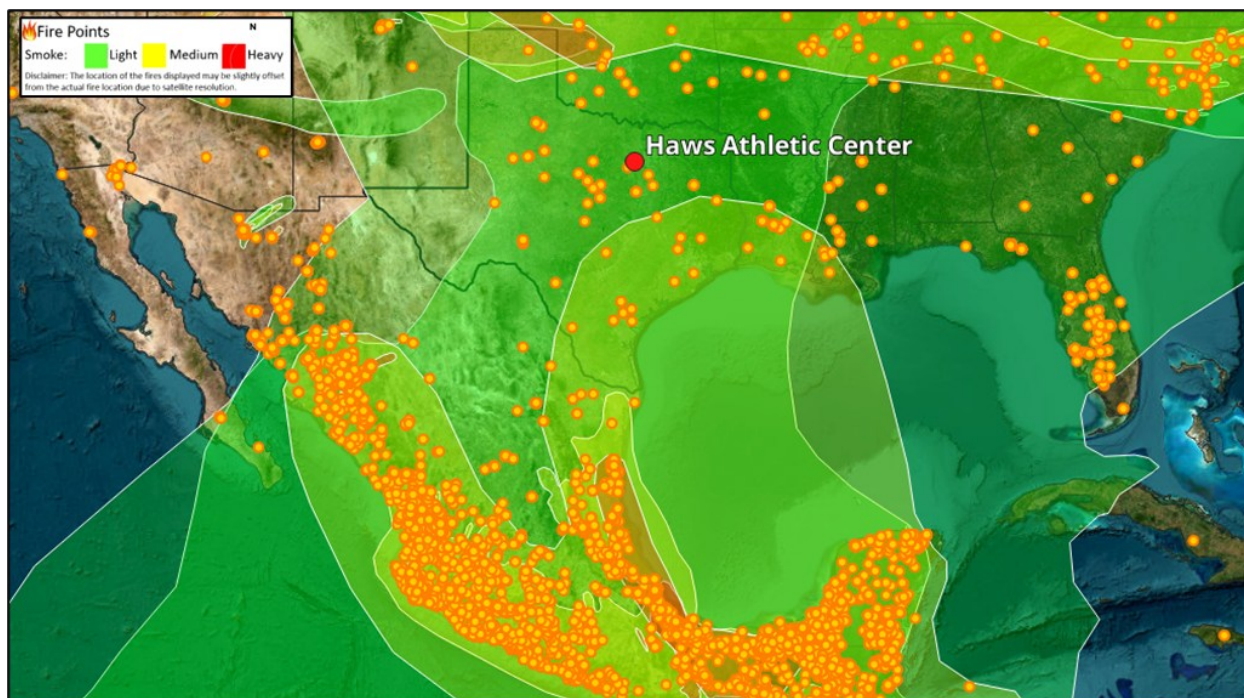


Figure A-52: Upper Air Sounding Chart from Fort Worth, Texas on June 14, 2023, at (12Z) 7:00 a.m. CDT



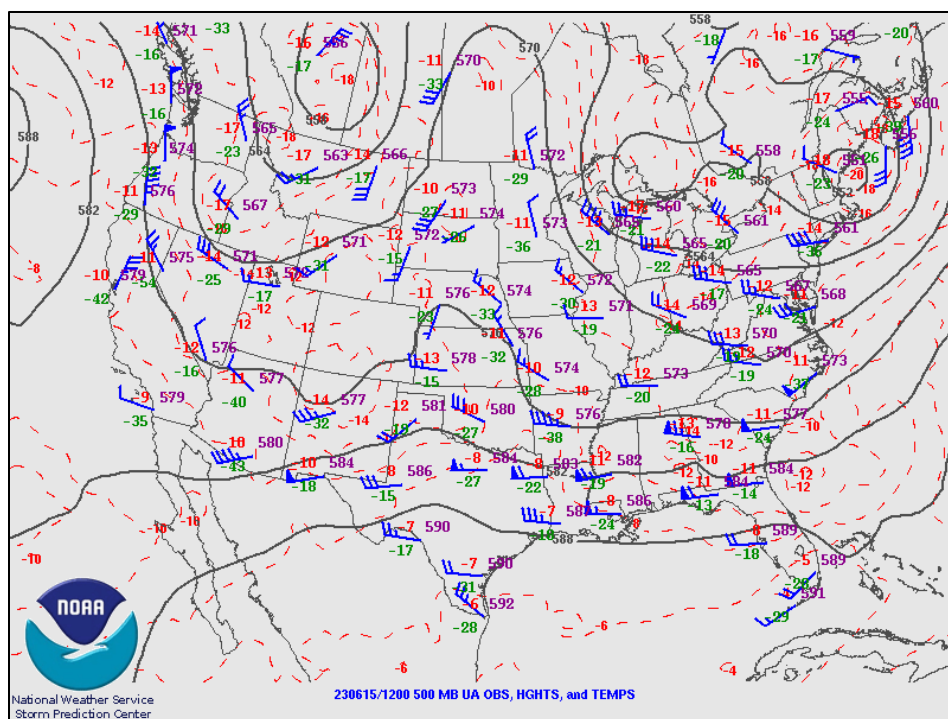


Figure A-55: National Weather Service Storm Prediction Center (June 15, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT

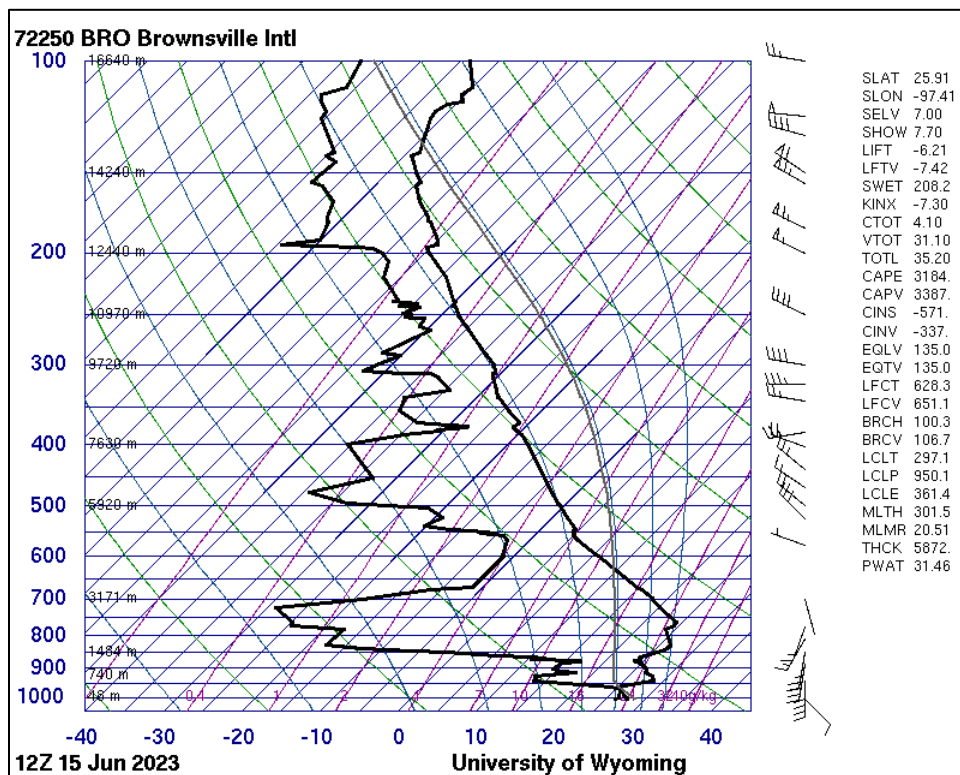


Figure A-56: Upper Air Sounding Chart from Brownsville, Texas on June 15, 2023, at (12Z) 7:00 a.m. CDT



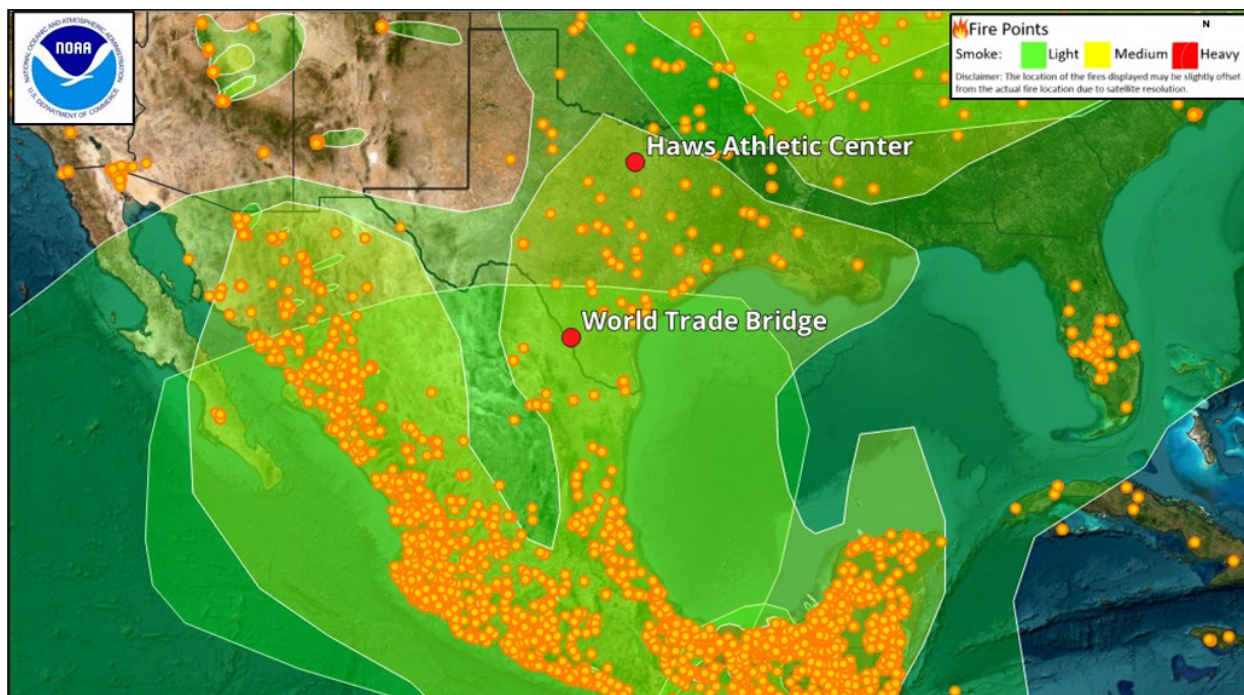


Figure A-57: NOAA HMS Fire and Smoke Map on June 15, 2023

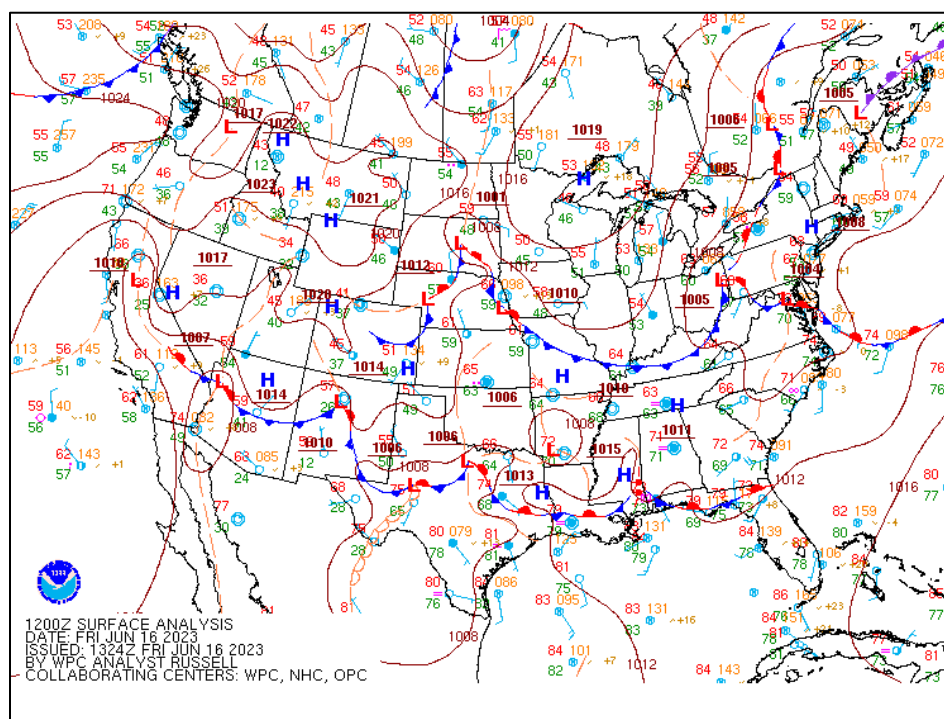


Figure A-58: National Weather Surface Weather Prediction Center (June 16, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT

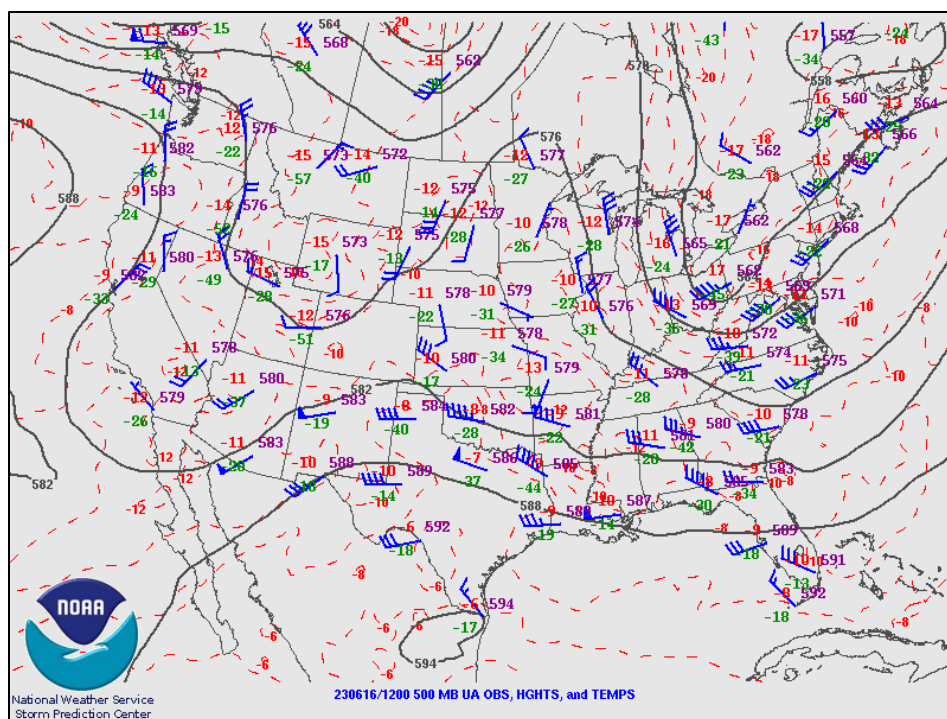


Figure A-59: National Weather Service Storm Prediction Center (June 16, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT

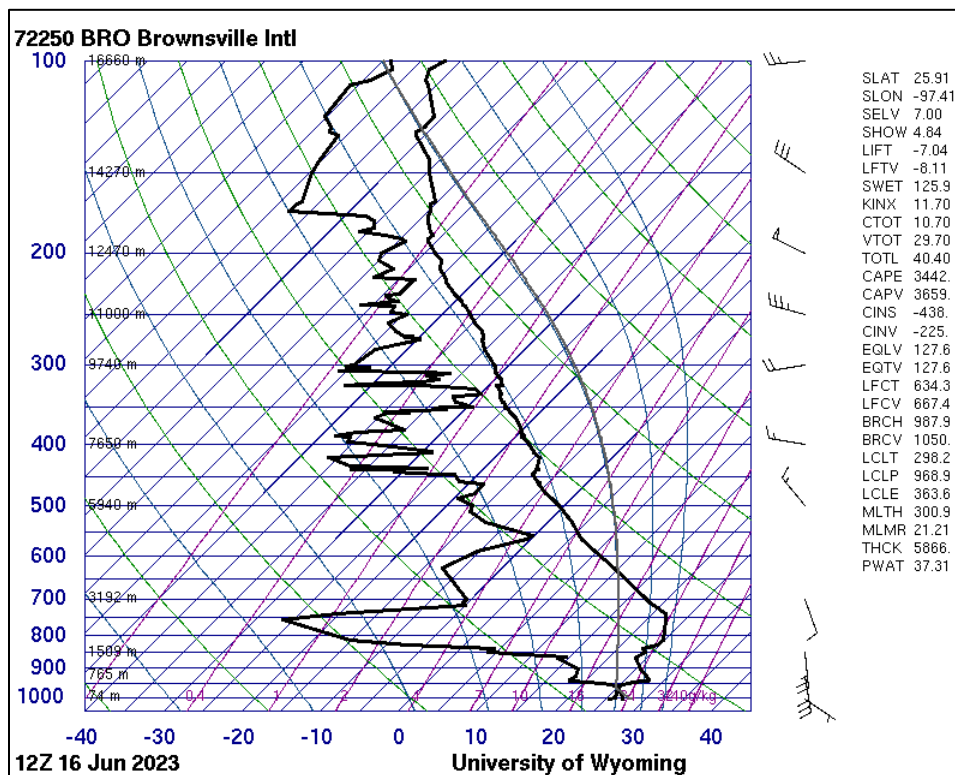


Figure A-60: Upper Air Sounding Chart from Brownsville, Texas on June 16, 2023, at (12Z) 7:00 a.m. CDT



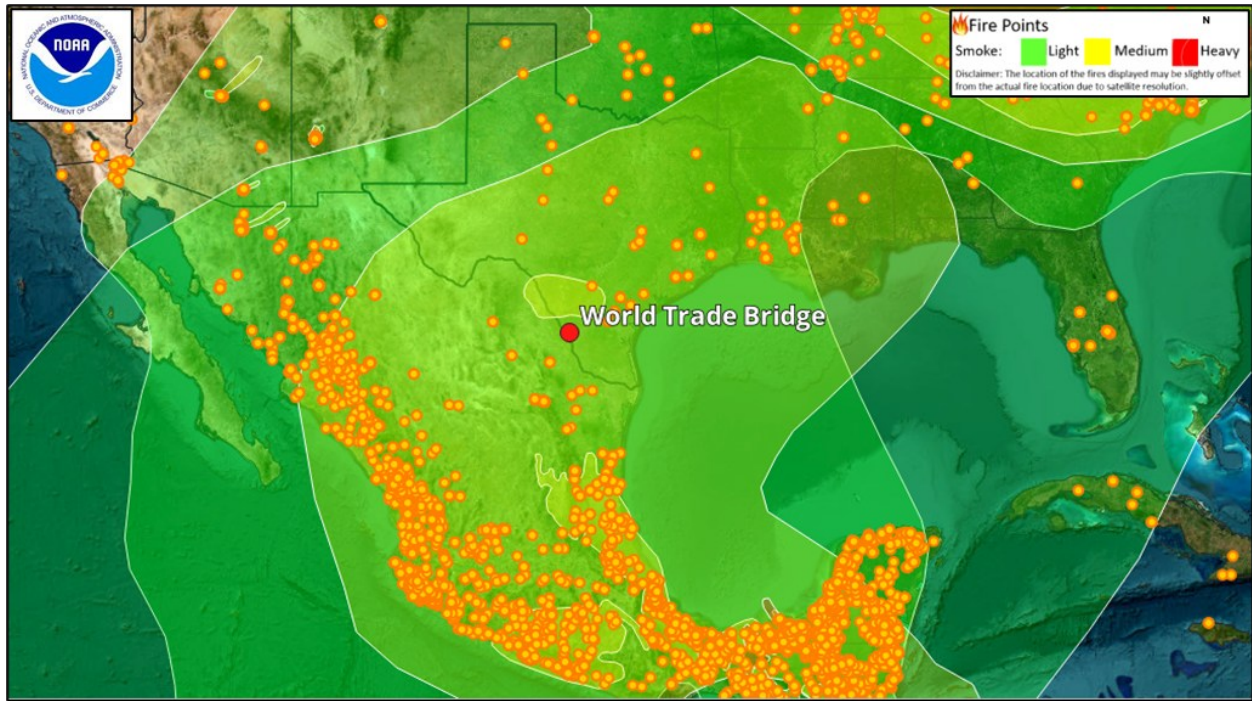


Figure A-61: NOAA HMS Fire and Smoke Map on June 16, 2023

#### A.10: GROUP 10 – JULY 15 AND JULY 16, 2023

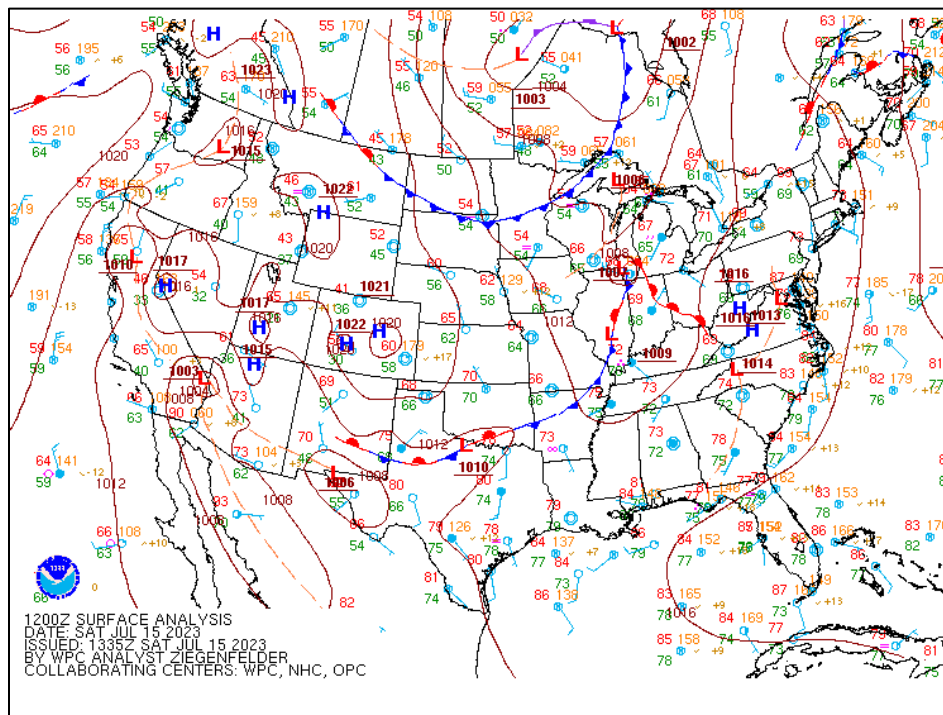
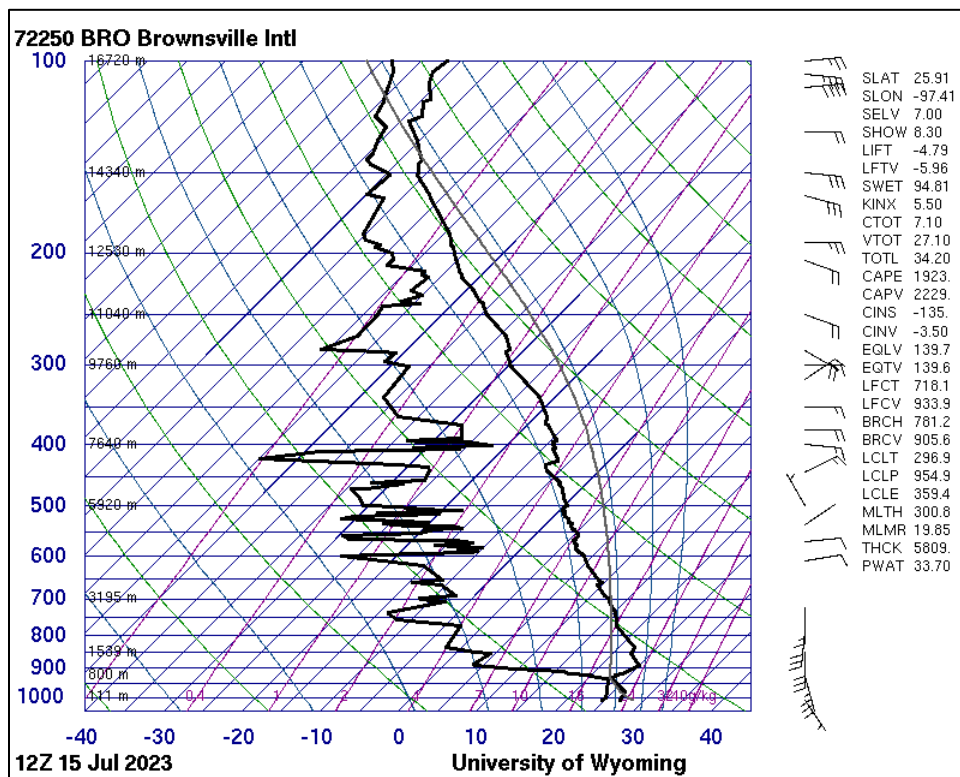
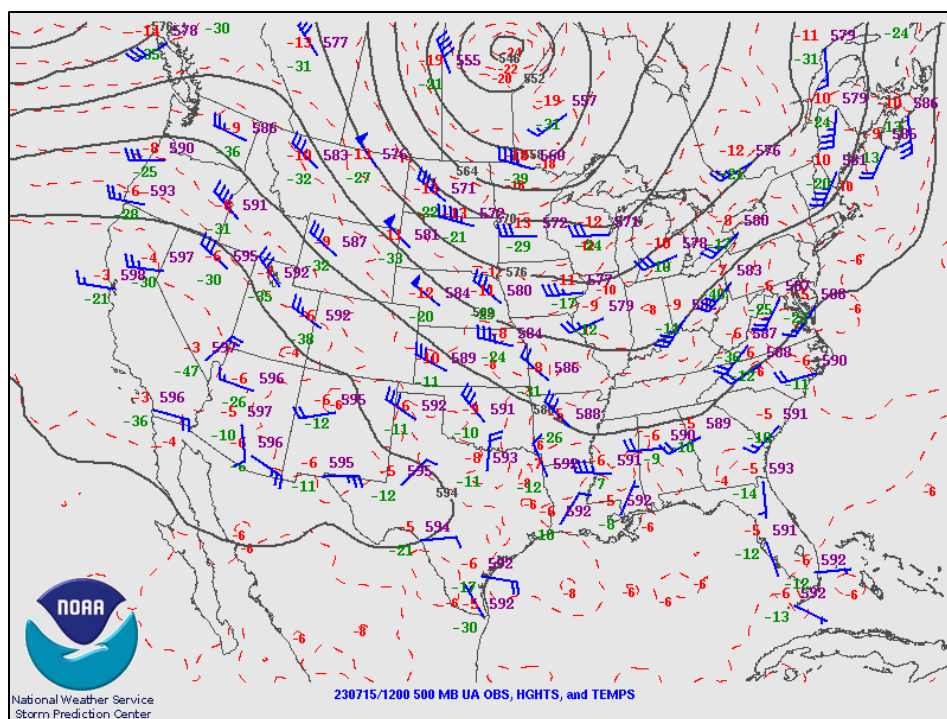
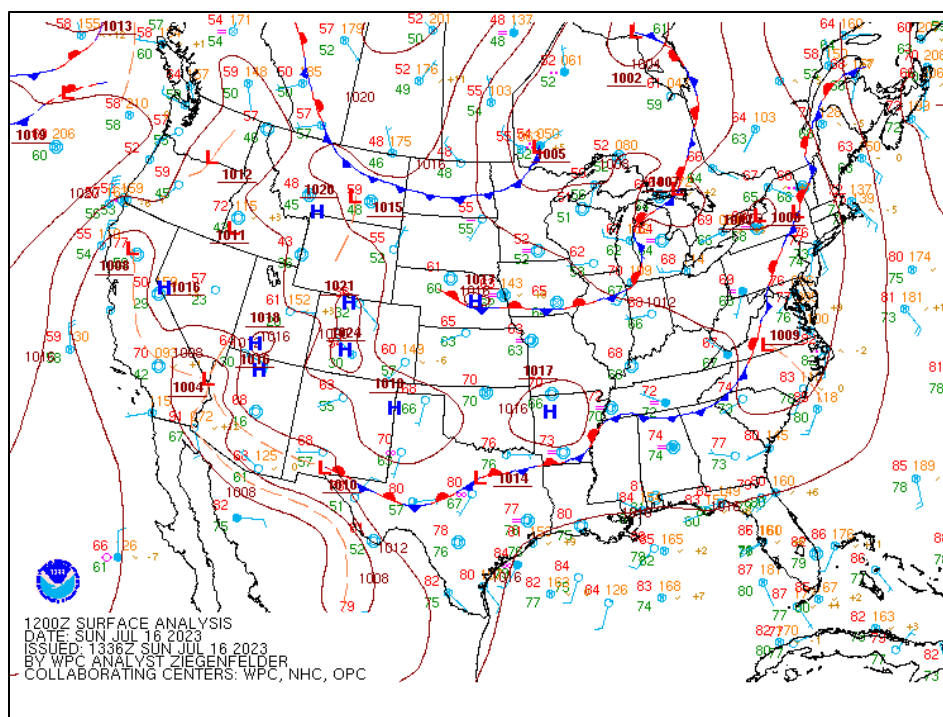


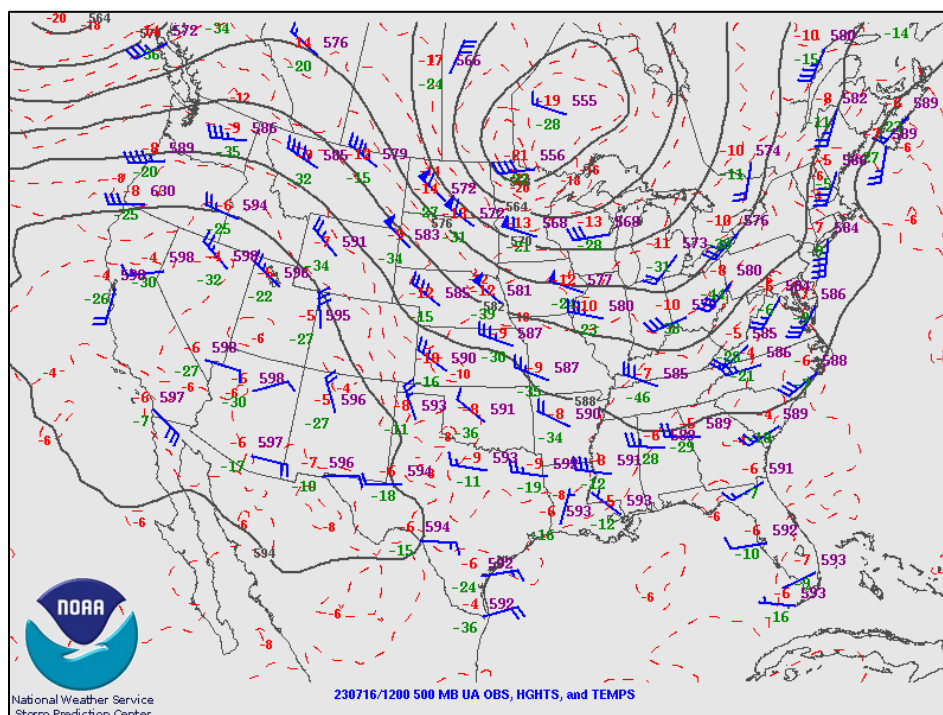
Figure A-62: National Weather Surface Weather Prediction Center (July 15, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT







**Figure A-65: National Weather Surface Weather Prediction Center (July 16, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT**



**Figure A-66: National Weather Service Storm Prediction Center (July 16, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT**

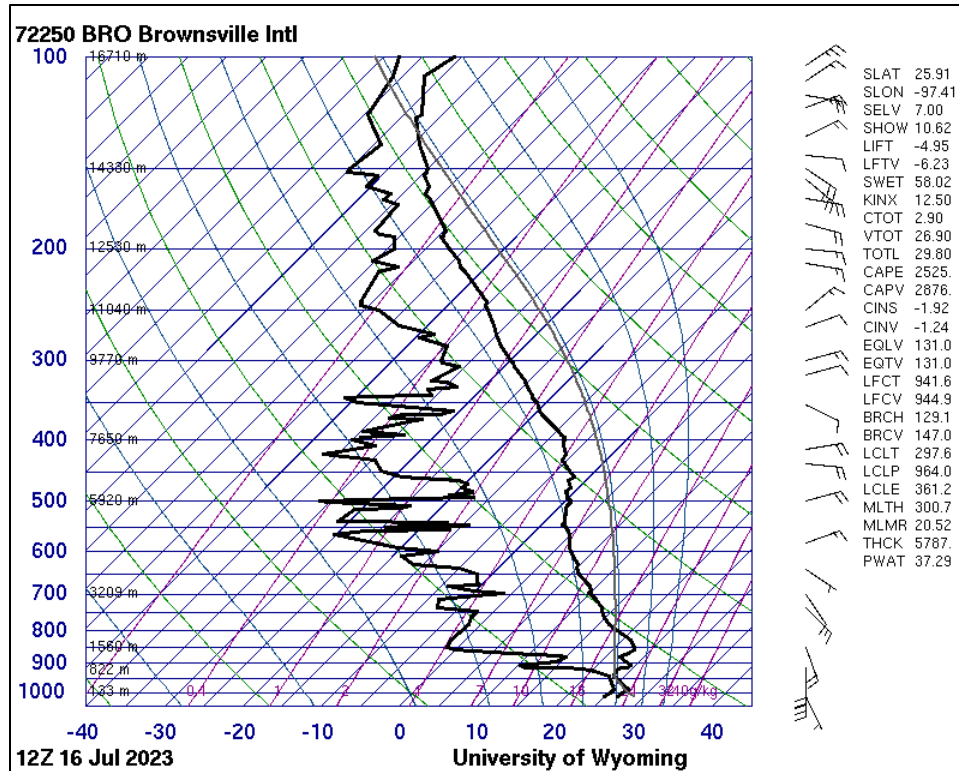
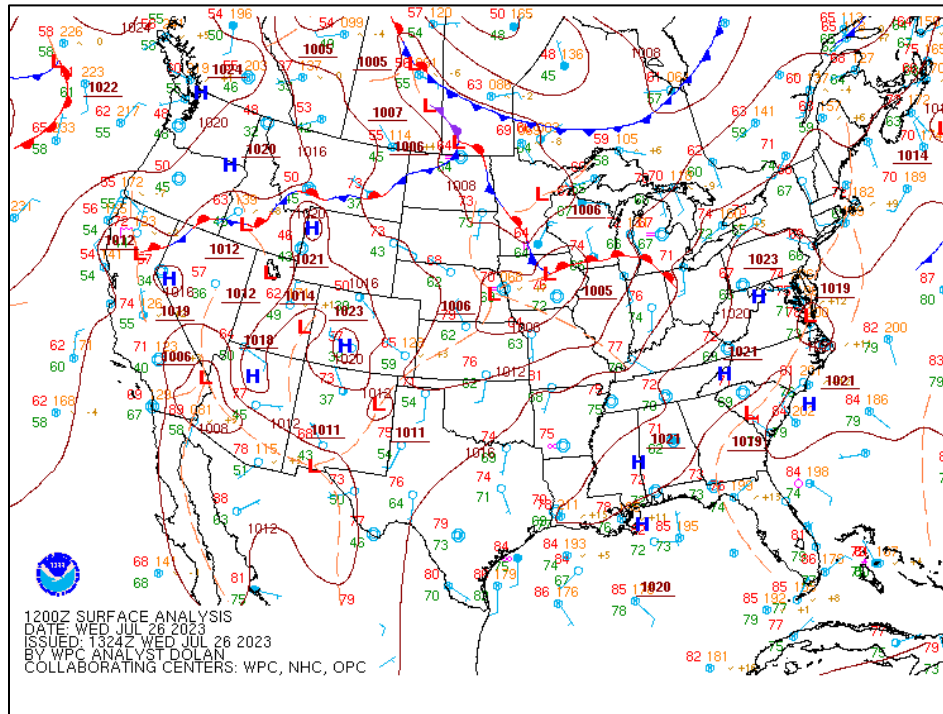


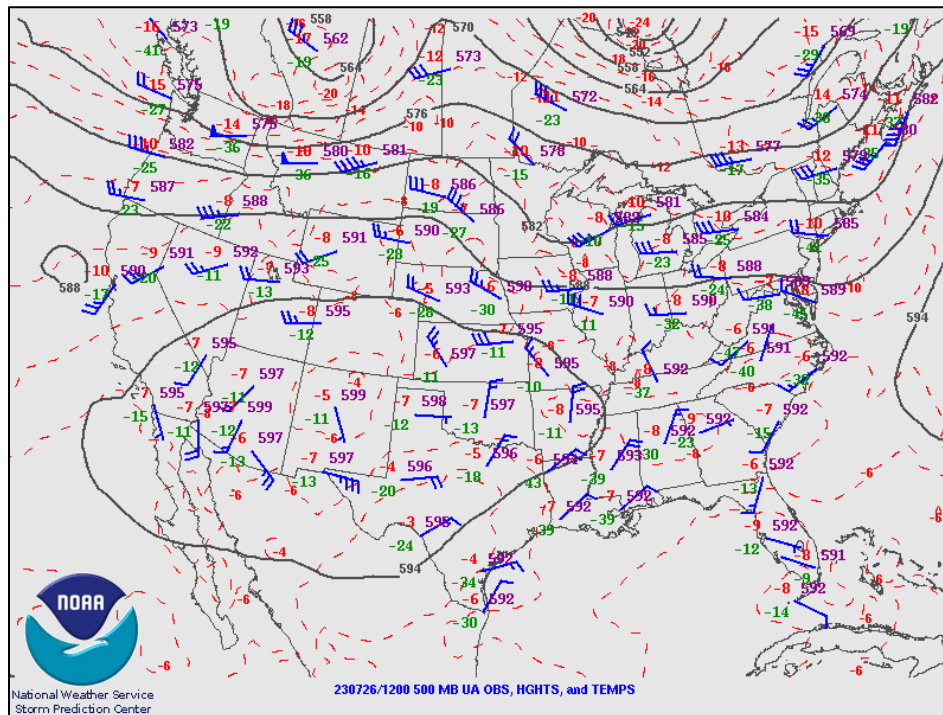
Figure A-67: Upper Air Sounding from Brownsville, Texas on July 16, 2023, at (12Z) 7:00 a.m. CDT



# A.11: GROUP 11 -JULY 26 AND JULY 27 2023



**Figure A-68: National Weather Surface Weather Prediction Center (July 26, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT**



**Figure A-69: National Weather Service Storm Prediction Center (July 26, 2023) 500 mb Analysis (12Z) 7:00 a.m. CDT**

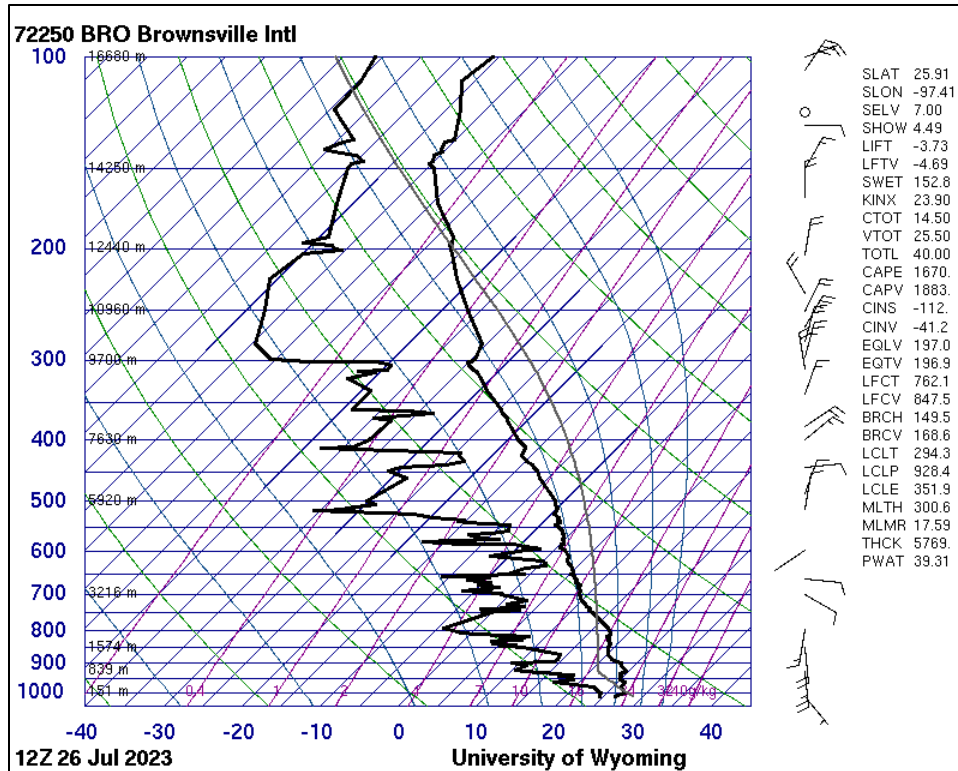


Figure A-70: Upper Air Sounding Chart from Brownsville, Texas on July 26, 2023, at (12Z) 7:00 a.m. CDT

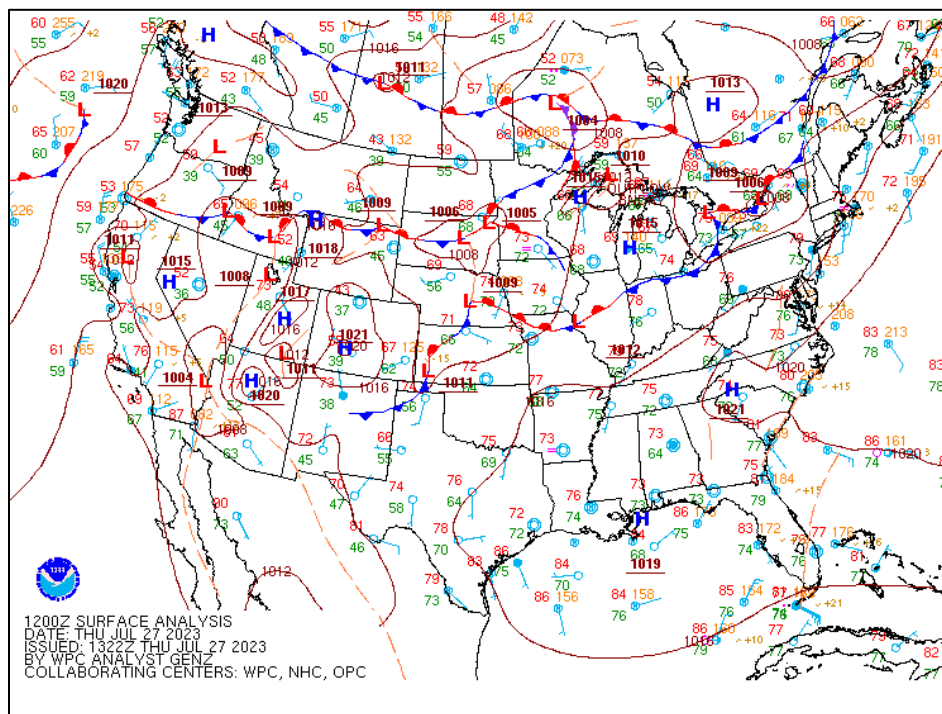


Figure A-71: National Weather Surface Weather Prediction Center (July 27, 2023) CONUS Surface Analysis (12Z), 7:00 a.m. CDT

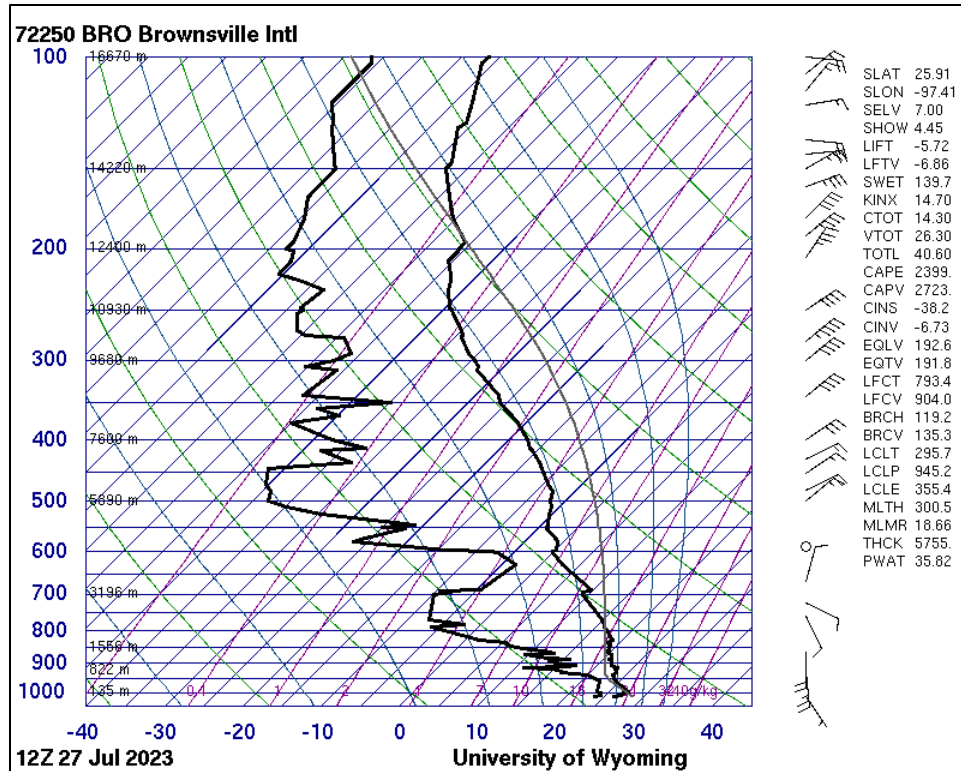


Figure A-72: Upper Air Sounding Chart from Brownsville, Texas on July 27, 2023, at (12Z) 7:00 a.m. CDT