

High Altitude MMIC Sounding Radiometer (HAMSR)

TCSP Field Campaign

Flight Data Summary—Science Maps

July 23, 2005

I. High Level Summary

The 55 and 183 GHz radiometers performed nominally during this flight. However, the 118 radiometer had no output either in the pre-flight check or in the flight. After the flight, all power supply outputs were checked and found to be nominal. The 118 digitizer test points were measured to be approx. 0.4 mV (they should be 1-3 mV). Inputting a 2 mV voltage into the detector did produce the expected counts in the 1500 range. Next the IF amplifiers were checked and the problem was traced to a failed IF amplifier (Miteq AFS4-02001800-24-10P-4, S/N 847822) that exhibited no output for -22 dBm in.

The failed amp has been replaced with a Narda DBS amplifier that was borrowed prior to the deployment. Some of the attenuators in front of the detectors also needed adjustment after installation of the replacement amplifier. The 118 receiver system is now functional and ready for future flights.

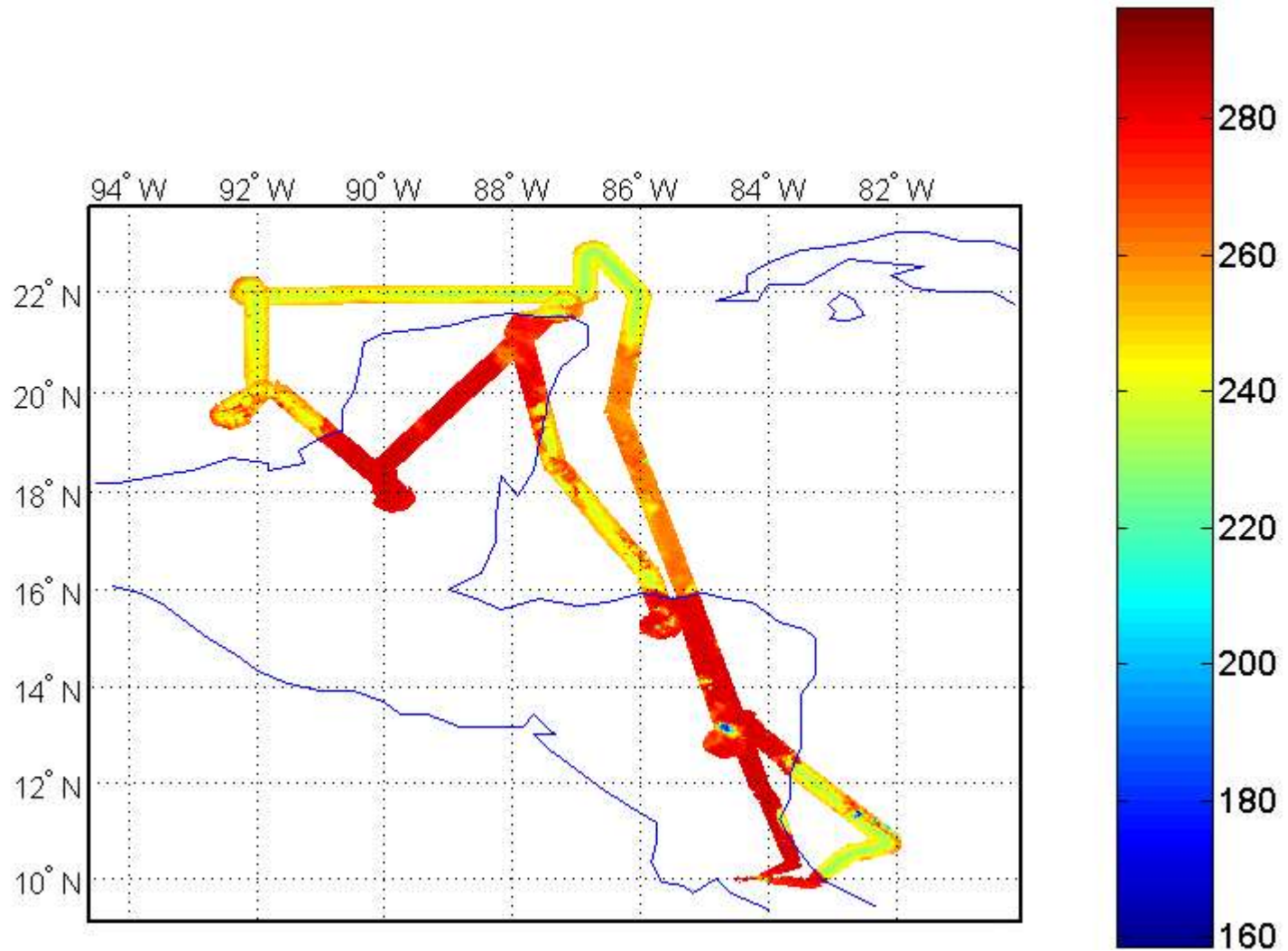
This flight was coordinated with NOAA43 and flew the tropical wave that generated TD#7 last night. The flight path took the ER-2 over the Caribbean, over the Yucatan Peninsula, and over part of the Gulf of Mexico.

II. Instrument State and Parameters

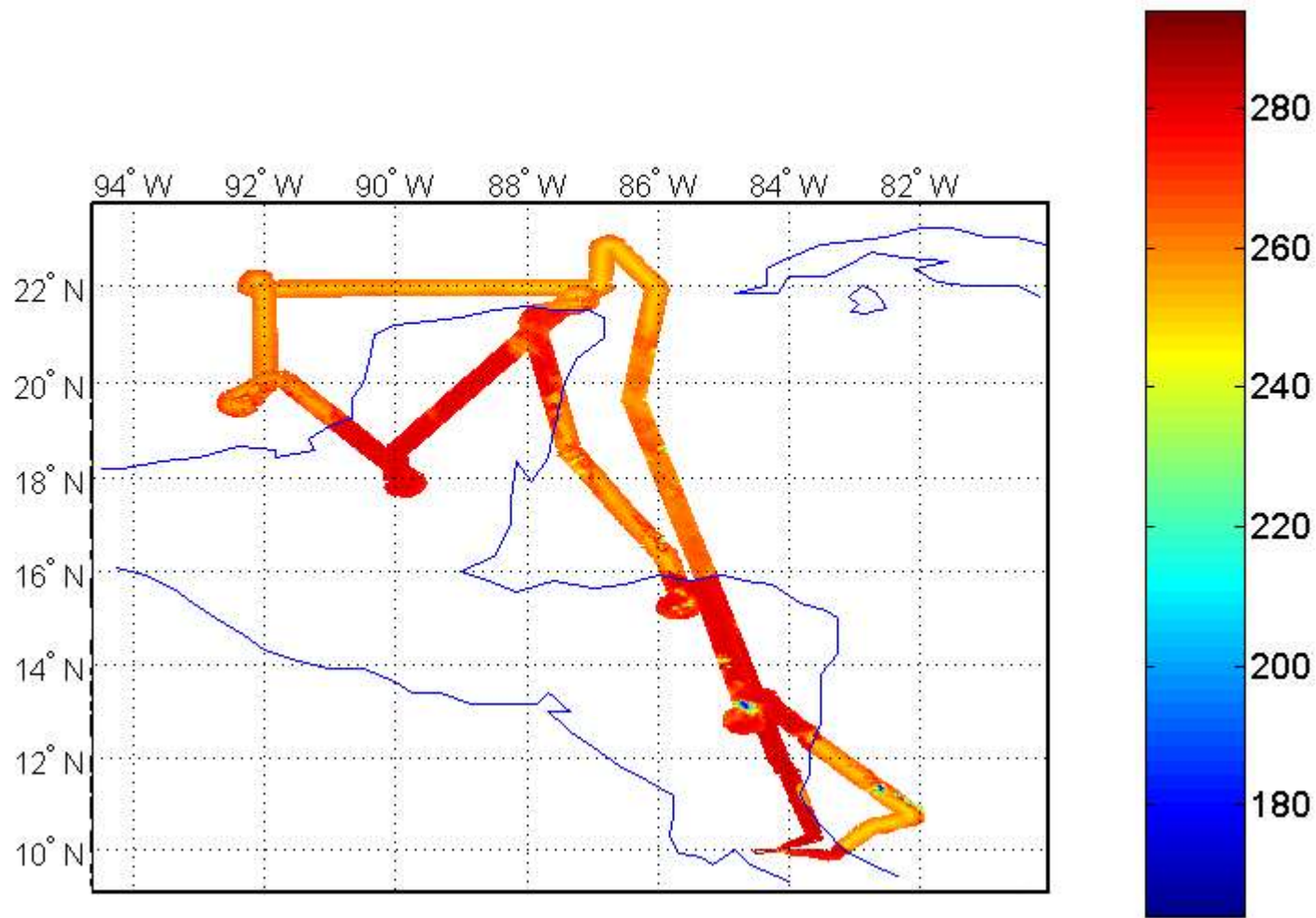
Instrument Power	ON
Fan Power	ON
Pod Heaters	ON
Seal Added Around Pod Window/Radome	NO
LN2 Load Used Pre-Flight	YES
Pre-Flight Data File Name	05072222.114
Flight Data File Name	05072301.595

III-a. Selected Maps

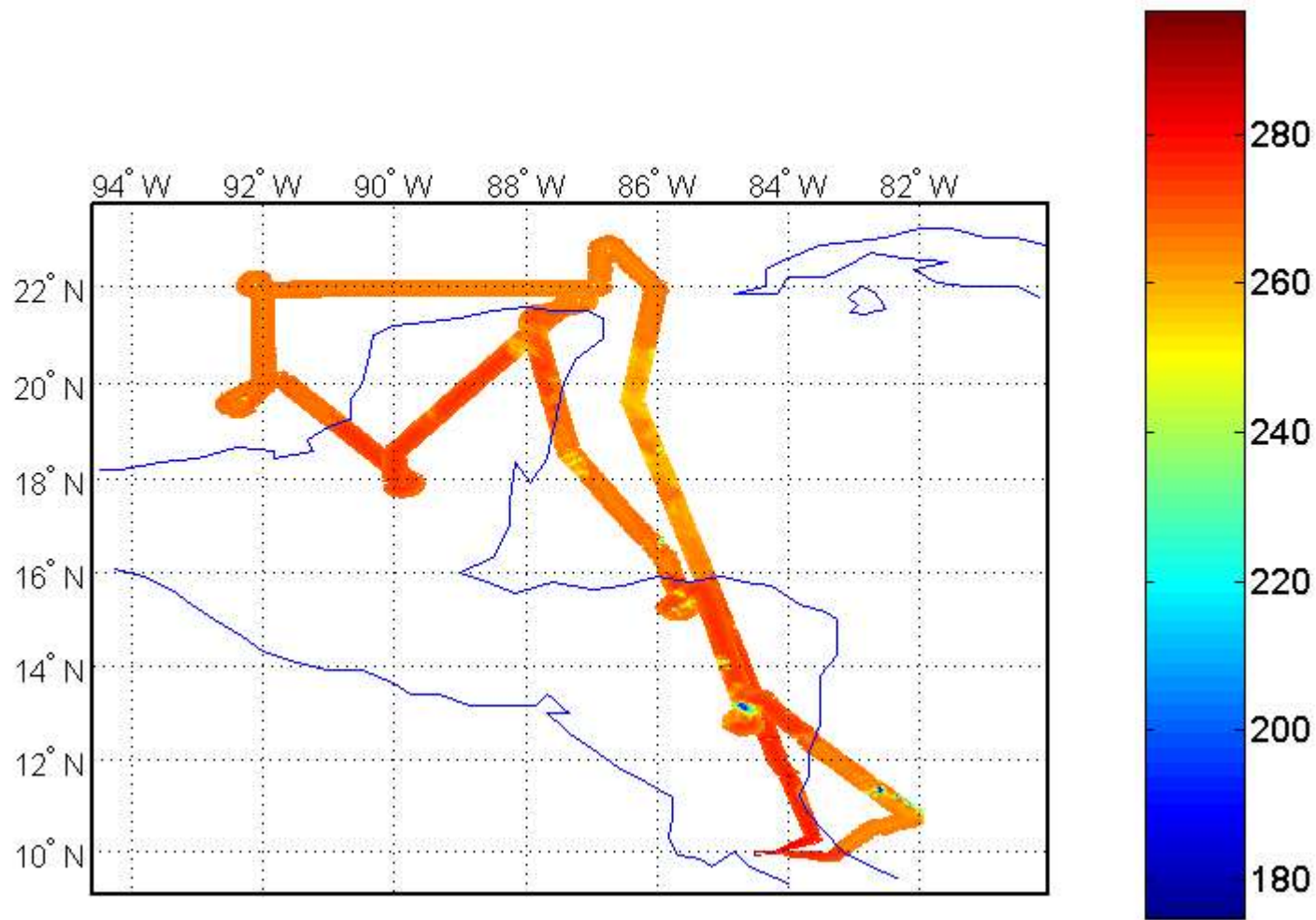
50.3 GHz brightness temperature(surface)
23-Jul-2005 02:00:38 -- 10:09:57



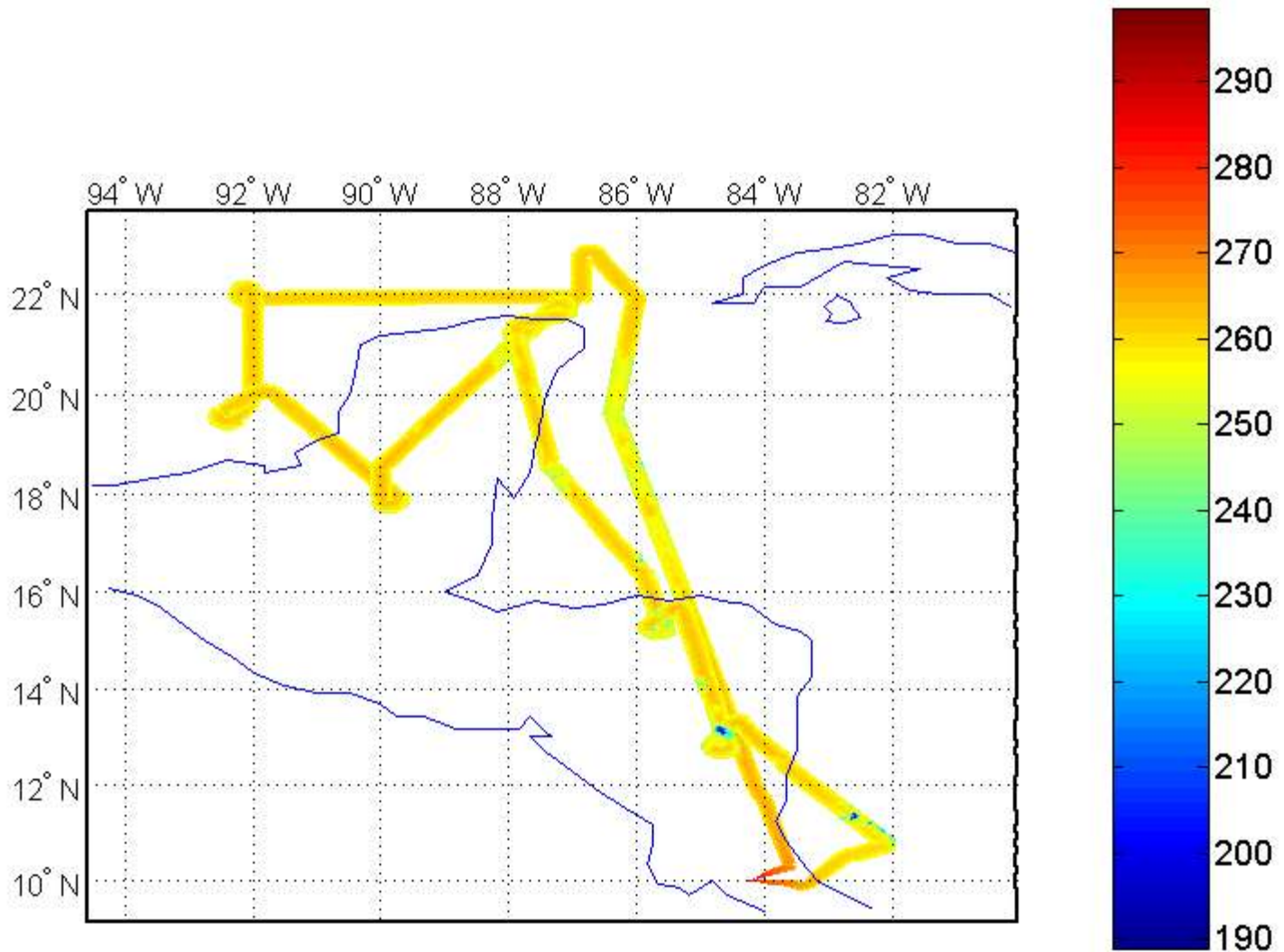
51.76 GHz brightness temperature(surface)
23-Jul-2005 02:00:38 -- 10:09:57



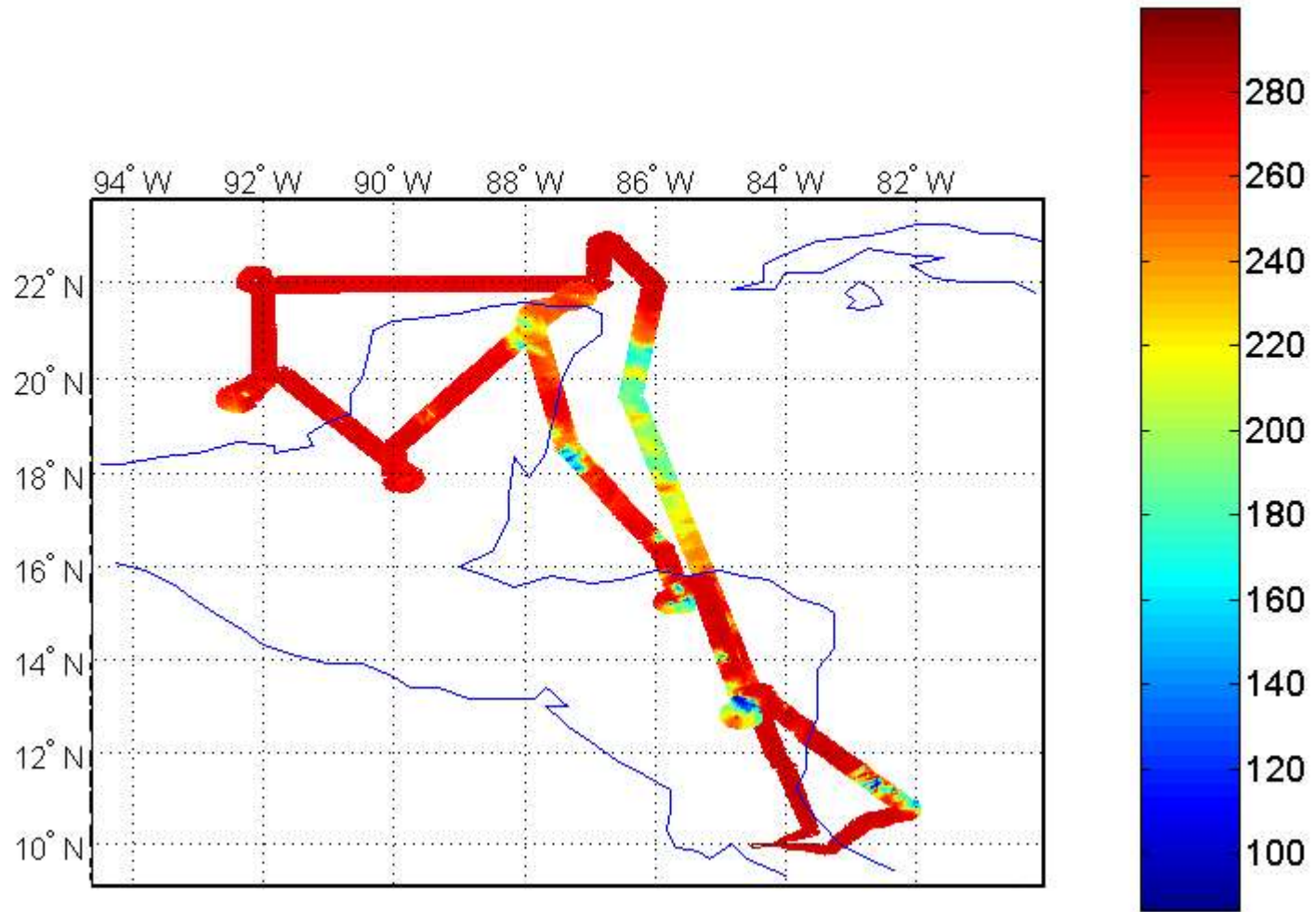
52.8 GHz brightness temperature(1000mB)
23-Jul-2005 02:00:38 -- 10:09:57



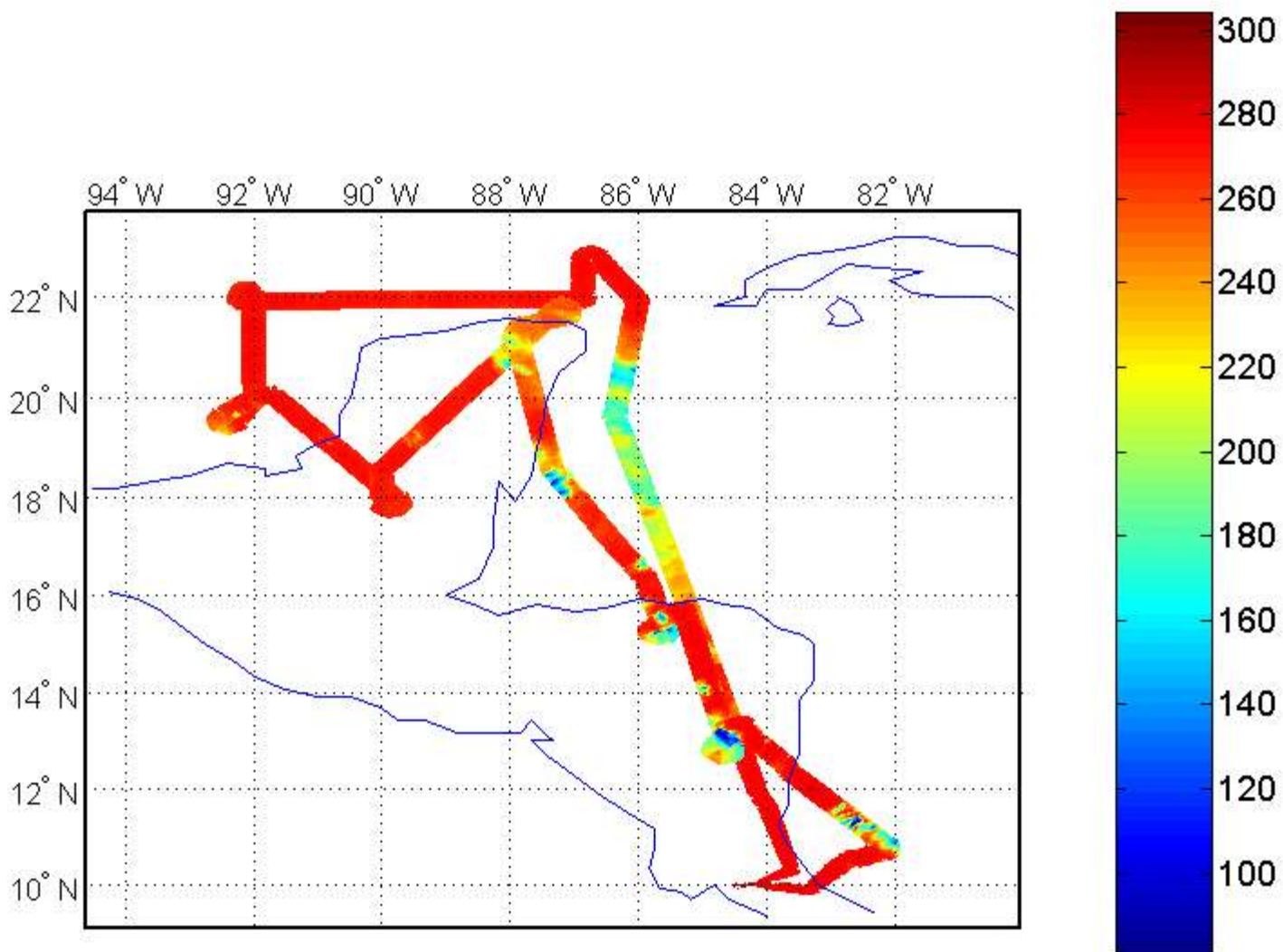
53.596 GHz brightness temperature(750mB)
23-Jul-2005 02:00:38 -- 10:09:57



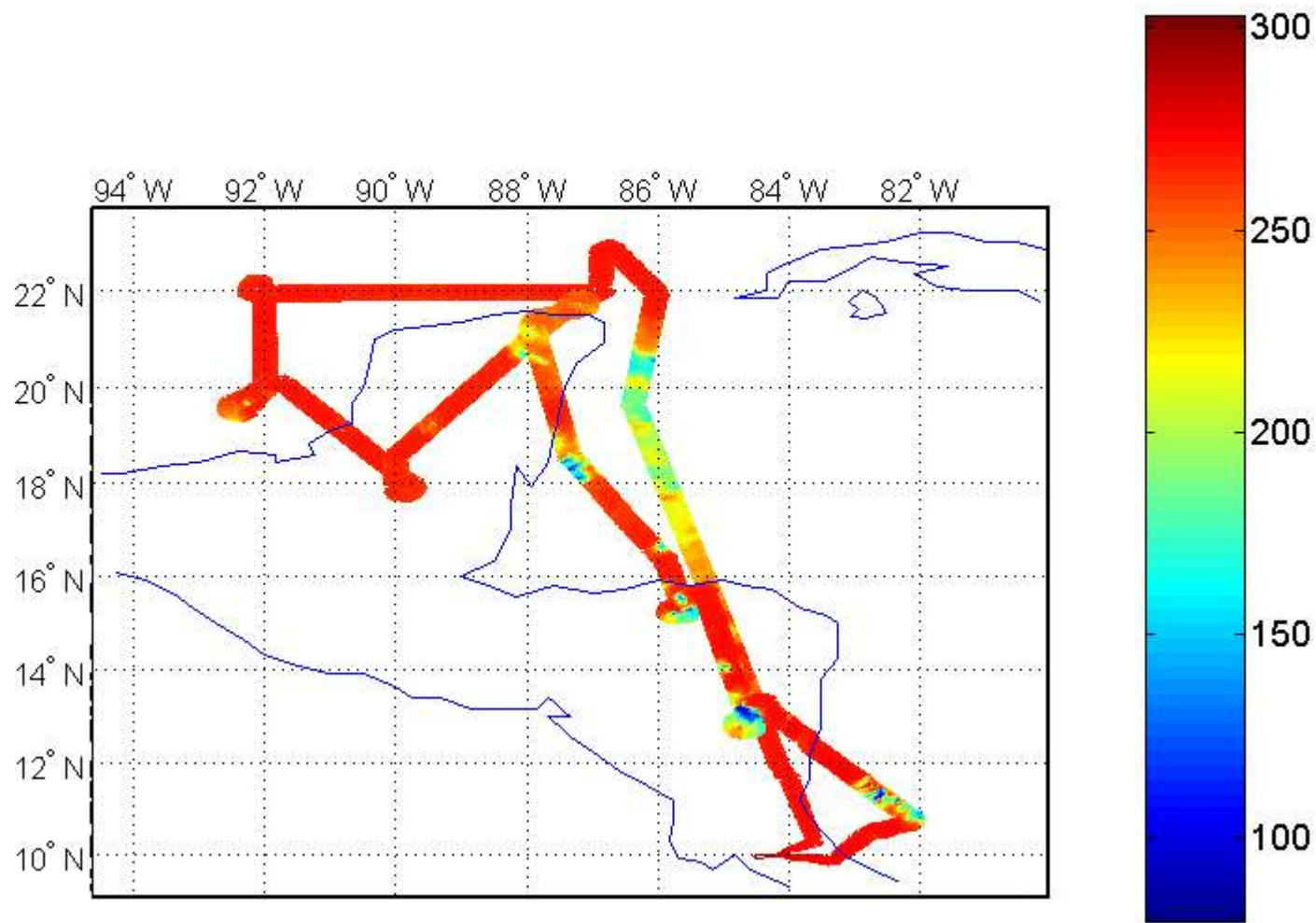
166 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



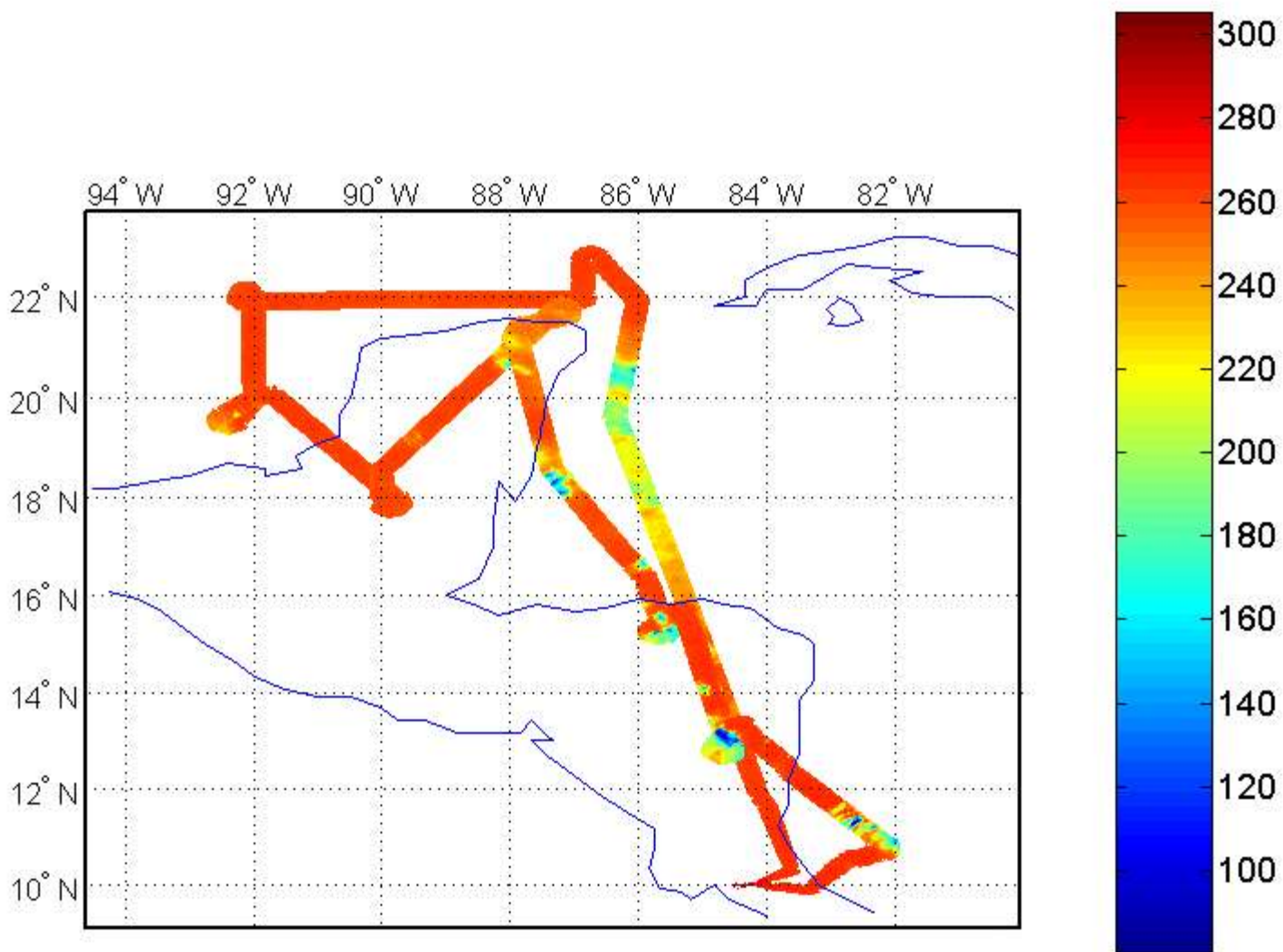
173.31/193.31 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



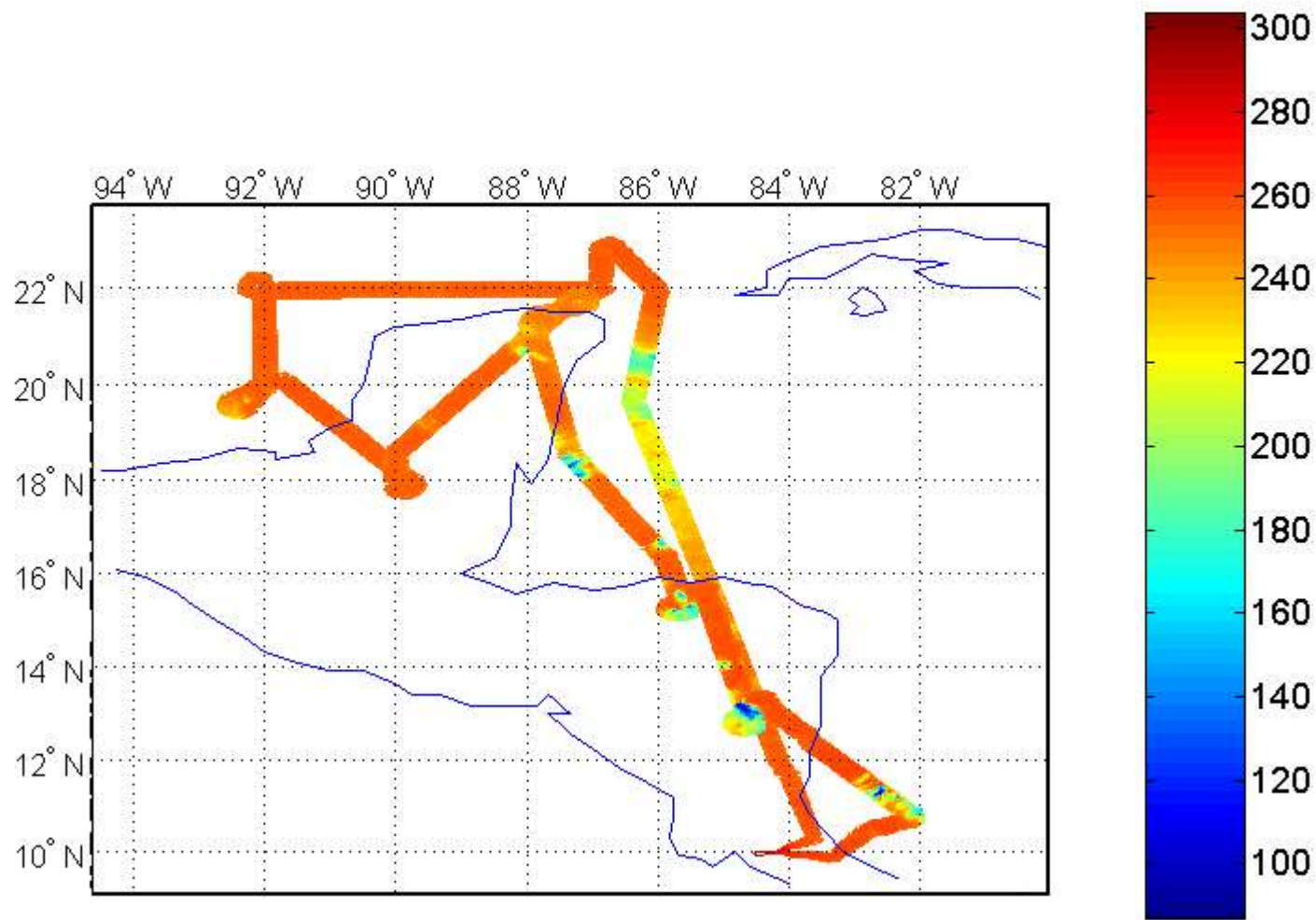
186.31/190.31 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



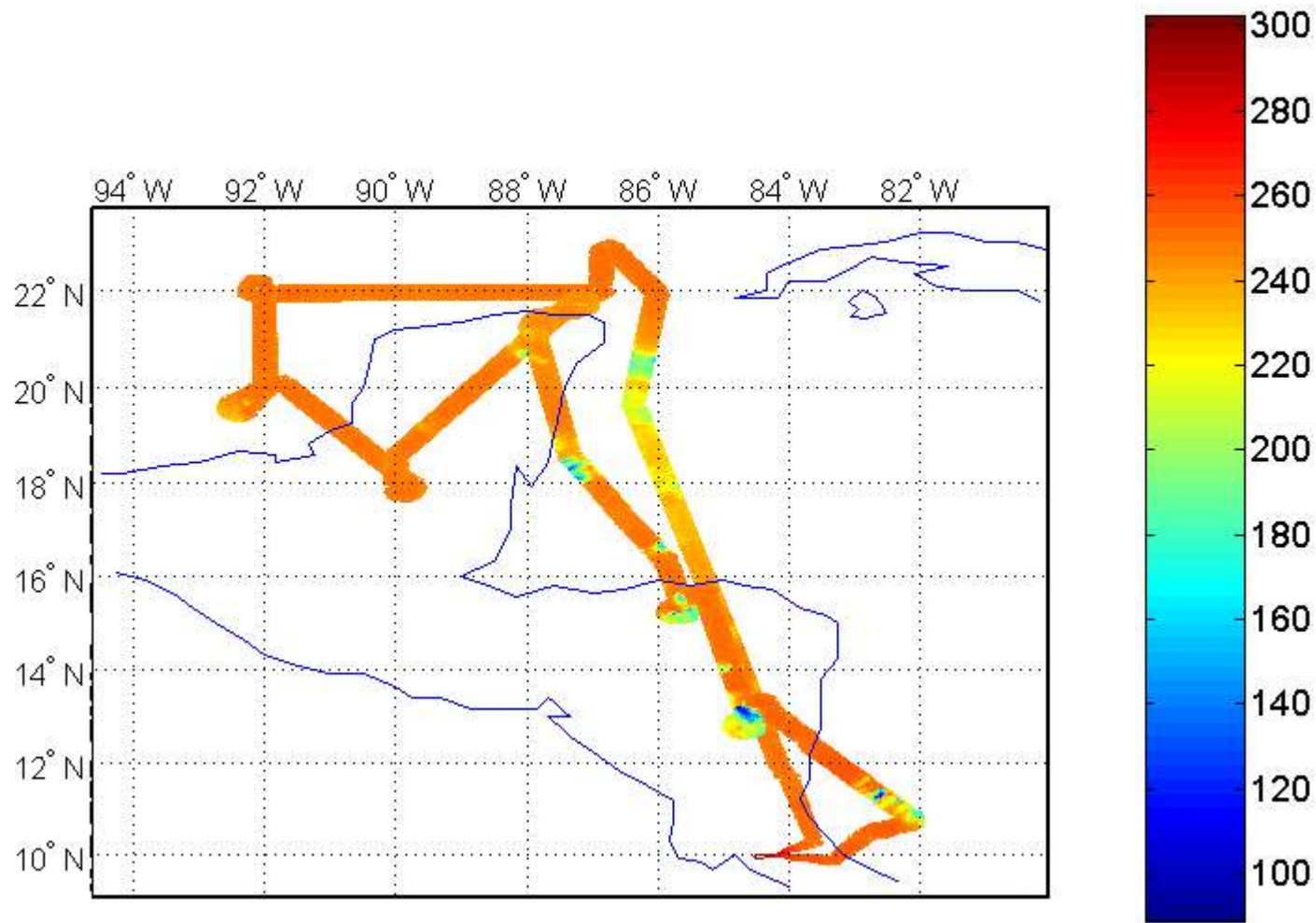
178.81/187.81 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



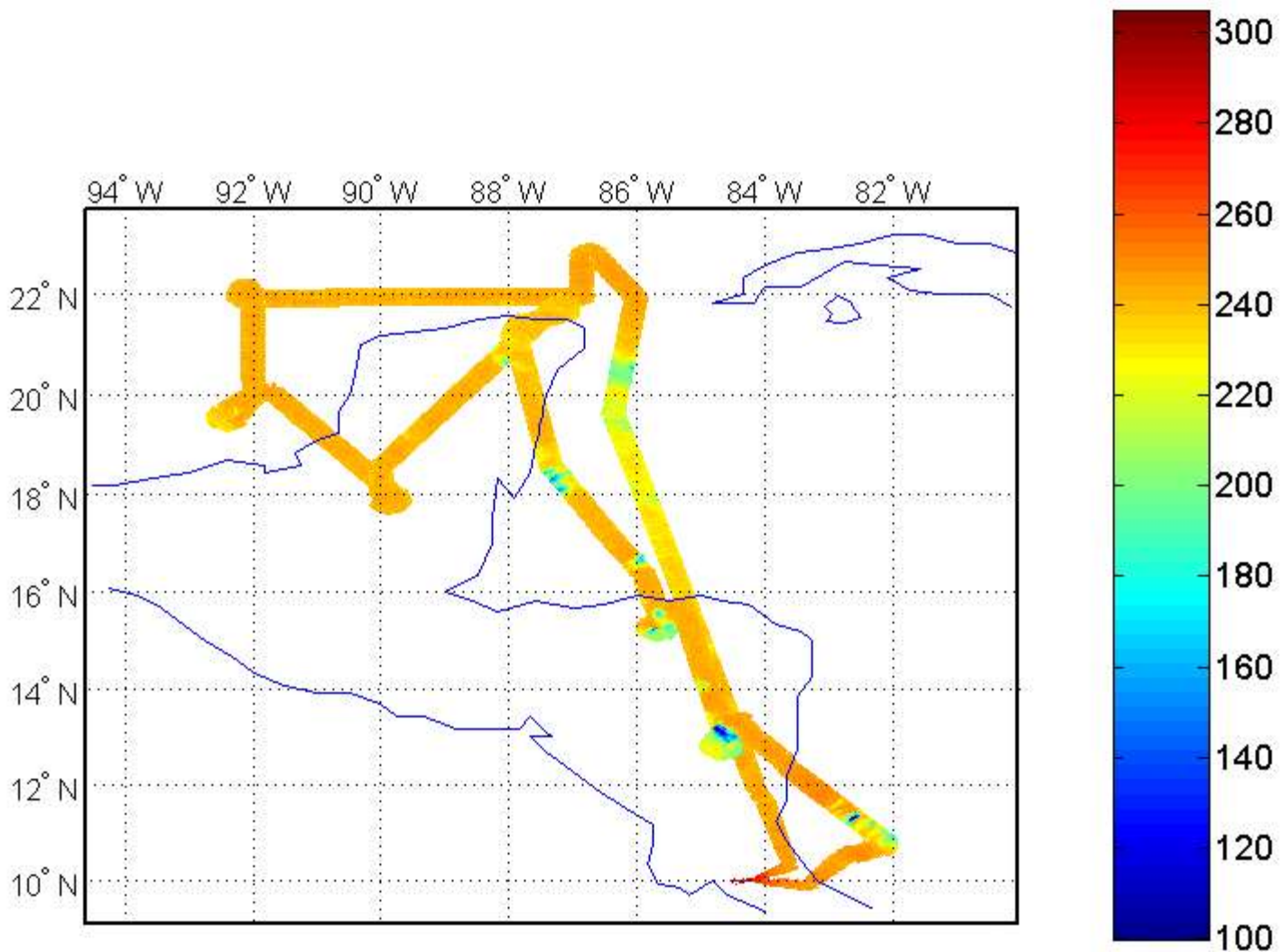
180.31/186.31 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



181.51/185.11 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



182.31/184.31 GHz brightness temperature
23-Jul-2005 02:00:38 -- 10:09:57



III-b. Selected 55-118 GHz Radiometer Difference Maps

***** No difference maps due to failed IF amplifier in 118 GHz receiver *****