

**Jetstream-31 (J31) Flight Report for INTEX-ITCT  
Flight 18 - 31 July 2004**

Terra MISR Local Mode and Aqua overpasses. Profile and legs above stratus cloud with small AOD. Water vapor profile near Ron Brown and its sonde. Coordination with DC-3 lidar over Ron Brown, but AATS got water vapor data only, because of cirrus.

In Cabin: Livingston, Pommier, Schmid.

Overview

This was the twelfth J31 flight out of Pease. Targets included the Terra MISR Local Mode and Aqua overpasses (1525 and 1705 UT, respectively), plus the Ron Brown and DC-3 lidar when returning from the overpass measurements. Cloud conditions were very difficult—lots of high cloud in the Gulf of Maine.

J31 and its instruments performed well.

Flight Path, Timing, and Measurements

Flight path is shown in Figure 1 below. Takeoff at 1356 UT. Climbed to ~6.4 km, looking for cirrus-free area. Flew East ~300 miles looking for clear sky and finally found it along with uniform cloud below. We had a limited amount of time due to the head winds going back but we did L shaped legs at three levels (~6.5, 2.2, and 0.6 km). Aerosol optical depth (AOD) above the cloud was small (~0.05 at 500 nm—see Figure 2 below).

Came back to RV Ron Brown, which released its 1300 local (1700 UT) sonde during J31's profile. The AATS profile at the ship is for water vapor only (no aerosol retrievals possible because of cirrus above). Coordinated with DC-3 on marine band radio.

SSFR data are shown in Figure 3 below.

Landing was at ~1747 UT.

Debrief

POS: Similar to previous flights..

Nav/Met: OK.

SSFR: Operated well.

AATS: Performed perfectly. Booted OK the first time. Temperatures OK.

# J-31 Flight 18, July 31

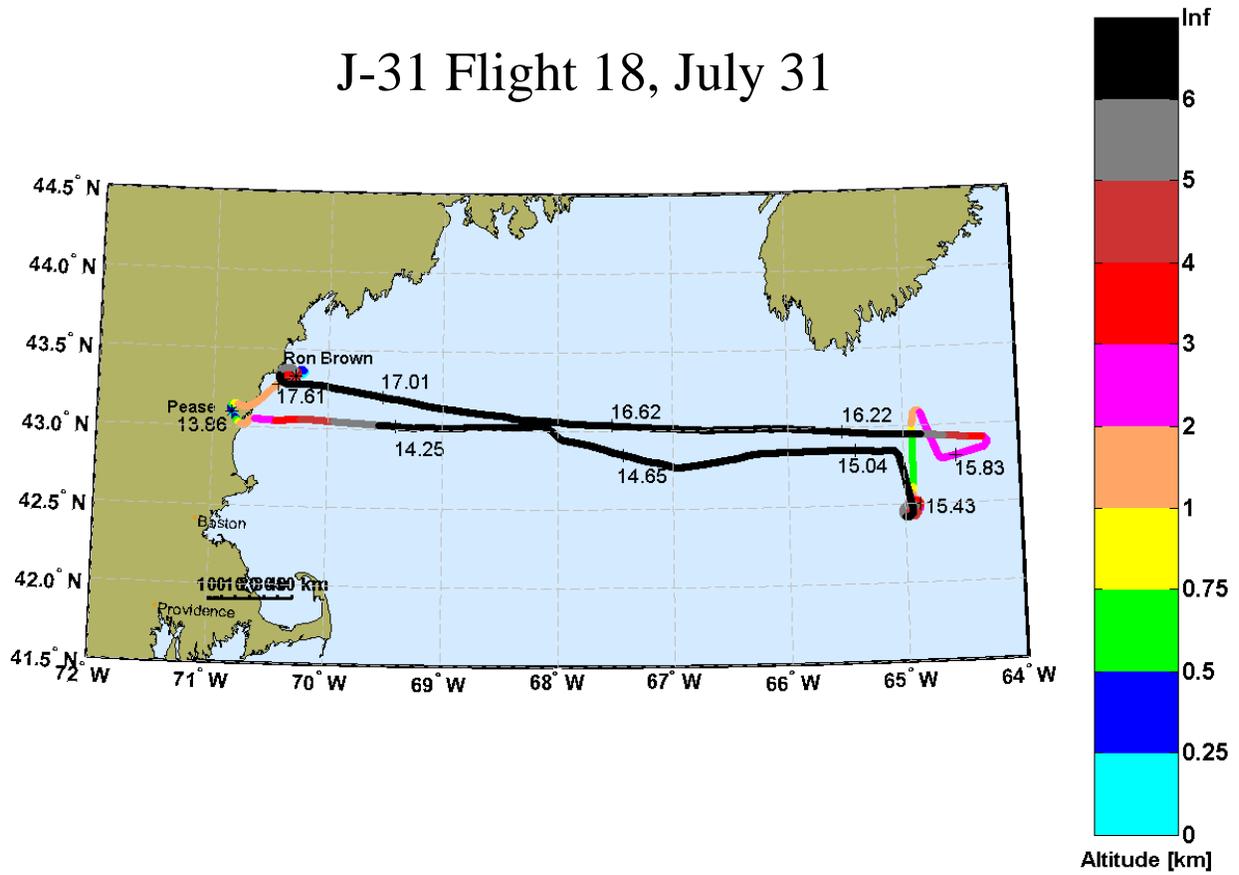


Figure 1. Flight track of J-31, Flight 18, 31 July 2004.

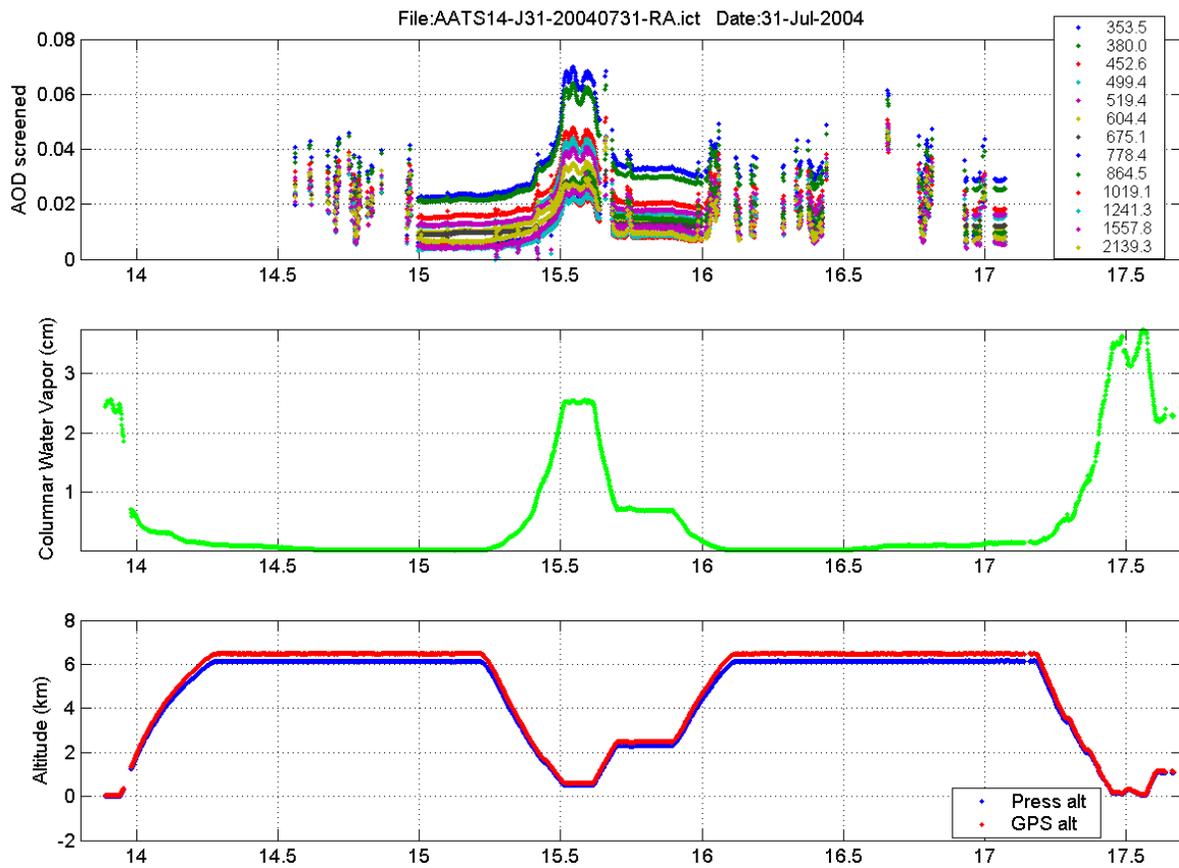


Figure 2. Time series of AATS-14 data for J-31 Flight 18, July 31, 2004.

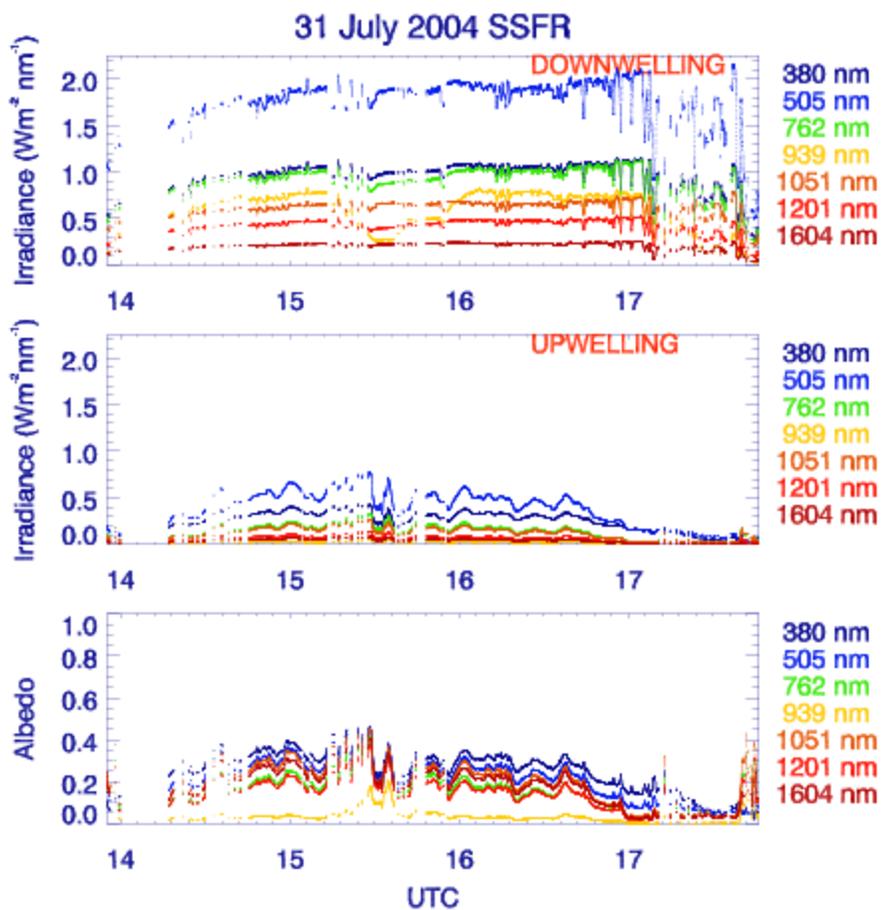


Figure 3. Time series of SSFR-measured downwelling and upwelling irradiance and albedo for J31 Flight 18, July 31, 2004. The downwelling (and albedo) has been filtered to remove data when the aircraft attitude deviated by more than 3% from level.