

April 16, 2011 – Science Flight

Takeoff: 1705 UT, Landing: 2158 UT

A thin, patchy band of subtropical jet stream cirrus in the Gulf was sampled extensively on this flight. The aircraft ascended and headed southwest toward the southern tip of Texas, reaching an altitude of 48 kft before descending to 27 kft and heading east along the band of cirrus. The aircraft passed through a thin layer of cirrus at \simeq 48 kft. At 27 kft, they were below the cloud layer. The base of the cirrus appeared to be about 30 kft, with tops at about 36 kft. As they headed west, they ascended to 31 and then 35 kft, and they were within the cirrus at both of these levels. They stayed at 35 kft as they continued to the east end of the leg (southeast of Houston) and returned along the same heading back to the southern tip of Texas. There were within the cloud on these legs most of the time. When they turned east again, they descended to 31 kft. About two thirds of the way along the eastbound leg, they exited the cirrus, turned north, and ascended to 57 kft en route to the balloon coordination point east of EFD. The aircraft spiraled down to 41 kft before returning to EFD. The balloon was sighted by the pilots near the top of the spiral.

This flight added considerably to our dataset of jet stream cirrus microphysical properties. The image below shows a view of the cirrus from the WB57 cockpit at \simeq 1844 UT.

Table 1: Instrument performance

SID3	Worked well
VIPS	Worked well
2DS	Worked, but noisy
CDP	Worked well
HVPS	Worked well
CIN	Power supply failure
NMASS	Worked well
FCAS	Worked well
PALMS	Minor problem
MMS	Worked well
ALIAS	Significant problem
CLH	Worked well
JLH	Potential problem
ULH	Worked well
DLH	Potential artifact
Harvard Water Vapor	Worked well
HHH	No data
Harvard Total Water	Not flown
Harvard Halogens	Minor problems
FISH	Computer failure
CIMS	Significant problems
O3	Worked well
O3Lite	Minor problem
Frostpoint balloon	Worked well

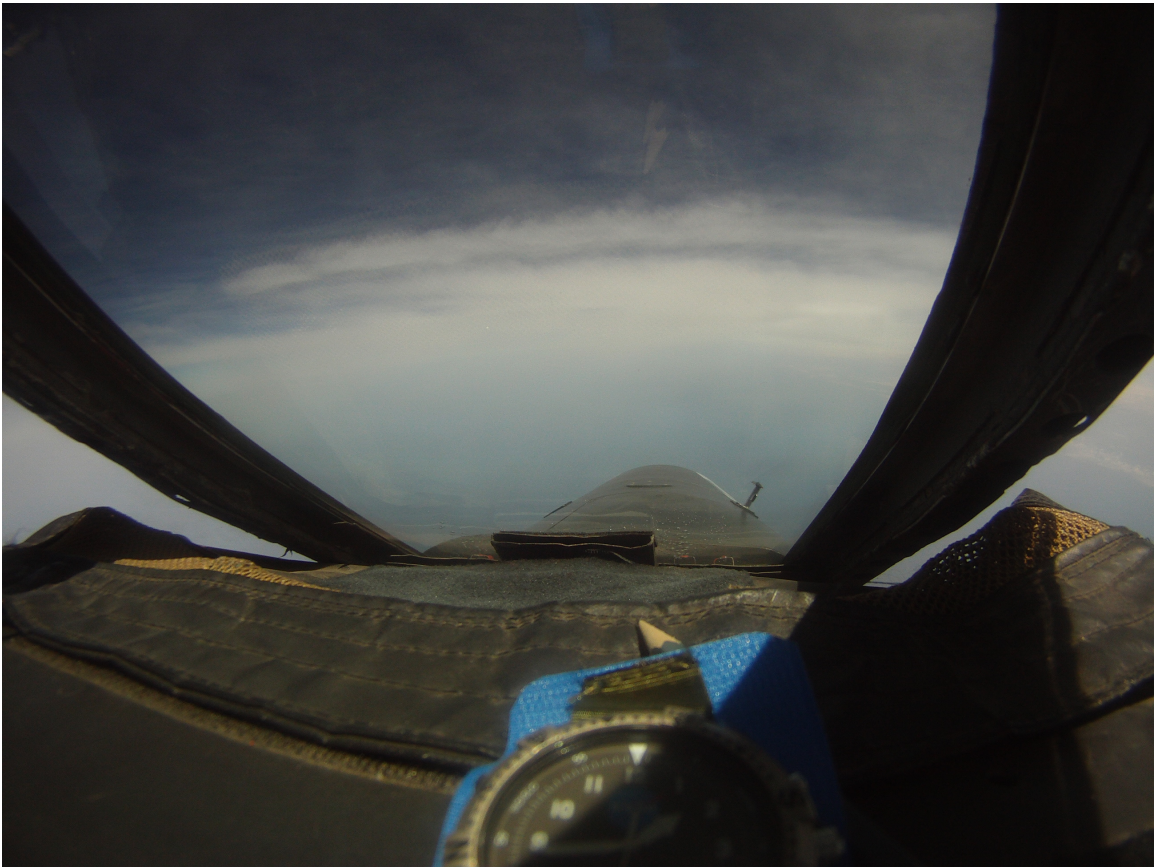


Figure 1: Image taken from the WB57 cockpit taken at ≈ 1844 UT.