

29 July 2002 Mission Report

Mission Summary:

The plan for the day called for the high fliers to coordinate for a Terra overpass over the Bahamas, and then sample the clouds and aerosols over the peninsula in conjunction with the other aircraft. There was light maritime cirrus off the east coast of Florida in the early afternoon, so the ER-2 and WB-57F were over relatively clear conditions en route to the overpass site. There was a significant thunderstorm that blew up north of Naples around 1730Z and produced an extensive cloud deck moving NW off the Florida coast throughout the rest of the afternoon.

Aircraft Summaries:

Citation

The Citation took off around 1700Z and flew more or less north to the Naples area. They did a series of runs oriented NW-SE off the west Florida coast in the anvil blow-off from the thunderstorms over Naples, noting very high ice-water content. The plane was struck by lightning at one point in the flight. They returned to base at about 2130Z.

ER-2

The ER-2 took off around 1500Z and flew a N-S traverse along the Florida west coast and then back to Key West over the water. They then headed off the east Florida coast and to the Bahamas in coordination with the WB-57F for the Terra overpass, launching a couple of dropsondes through low- and mid-level clouds along the way. They next flew a couple of legs across the east and west ground sites, and then some E-W legs moving north of the ground site, flying over the thunderstorm activity in the Naples area. The pilot indicated overflying a big cirrus shield NW of Naples, and said he saw lightning in the tops of the convective turrets as well as a curious, fast-moving wave-like feature moving through the tops of the thunderheads. The ER-2 returned to base around 2200Z.

P-3

The P-3 took off at about 1600Z. They loitered in the southwest Florida area until convection popped up around Naples. For the remainder of their flight, they sampled Cbs and anvils in the Naples area.

Proteus

After repairing an engine problem, the Proteus took off at about 1700Z and flew a flight coordinated with the ER-2 over the Naples Cbs and anvils.

Twin Otter

The Twin Otter took off on its first flight around 1230Z. They flew a vertical profile off the west coast and then flew north of the western ground site, crossing Interstate-75 to look for aerosols and pollution. They landed in Naples around 1600Z. They took off from Naples close to 1700Z and probed cloud bases in the thunderstorm activity around Naples. They did a good anvil radiation run off the west Florida coast. They landed in Naples again around 2100Z and refueled before returning to base.

WB-57F

The WB-57F took off at 1505Z. They headed northwest along the Florida Keys, getting into some clouds on climb-out between 9 and 14 kft. They noted skimming through cloud tops at 20 kft, and then they were in a cirrus deck at around 31 kft and saw a fairly hazy layer around 39 kft. They then flew out toward the Bahamas in coordination with the ER-2 for the Terra overpass, flying at about 39 kft in clear conditions. They next flew some legs between the east and west ground sites at altitudes of 58, 53, 48, and 43 kft. The tropopause was at about 51 kft. They then flew some legs north of the western ground site, getting into the intense thunderstorm activity in the Naples area. The cloud tops were at about 43 kft. They returned to base around 2100Z.