

**EXPERIENCE WITH COORDINATED PLANNING
FROM ICARTT (AND TRACE-P)**

THE NASA/TRACE-P AIRCRAFT MISSION (Mar—Apr 2001)

Characterize Asian chemical outflow, place top-down constraints on sources

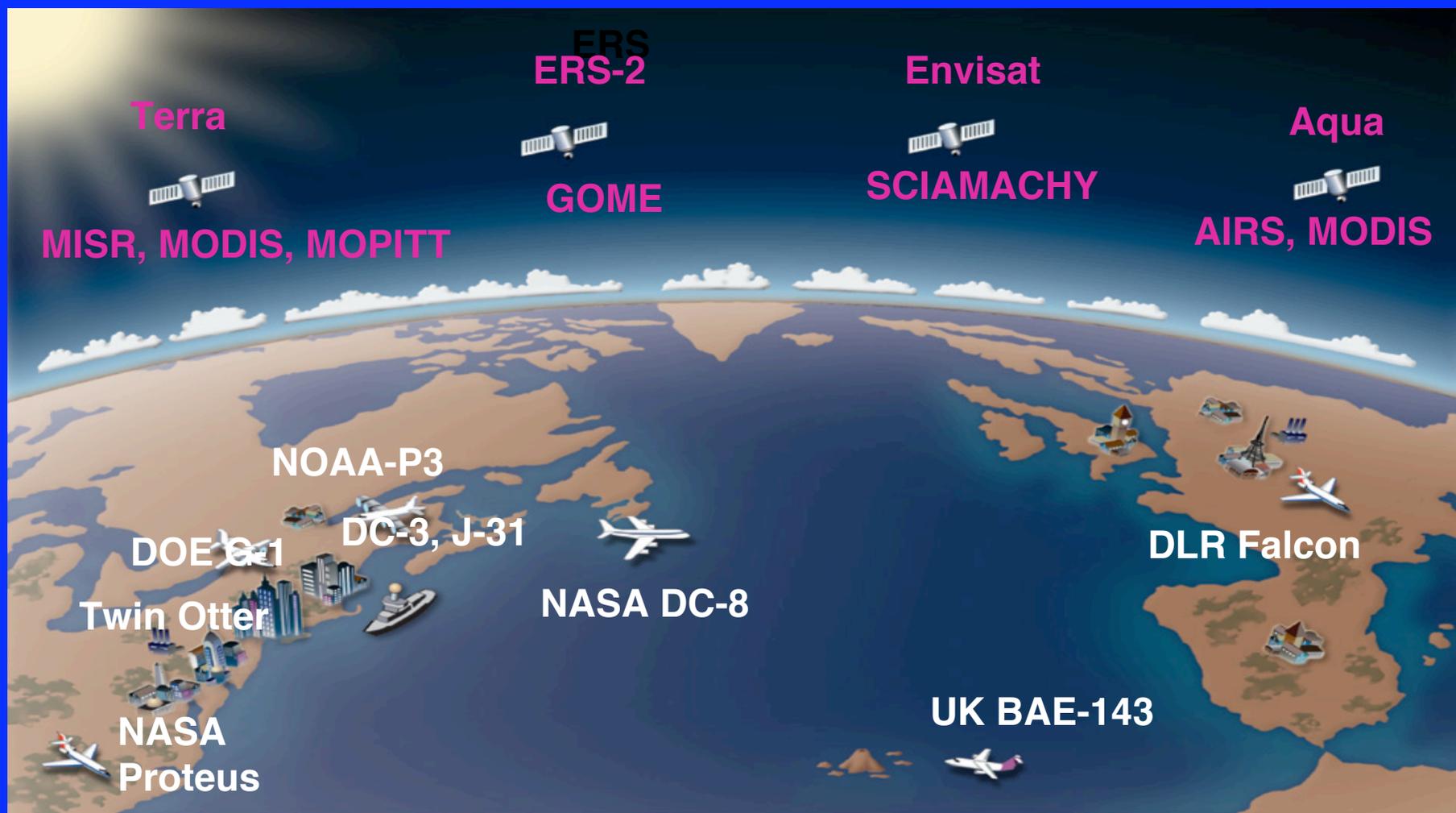
**Two instrumented aircraft (DC-8 and P-3) operating together out of
Hong Kong and Yokota AFB (Japan)**

TRACE-P COORDINATION WITH ACE-ASIA

- Two joint Asian outflow chemical characterization flights between the **TRACE-P P-3** and the **ACE-Asia C-130** out of Japan including a Terra underpass on each flight.
- One DIAL overpass of the **ACE-Asia Twin Otter** by the **TRACE-P DC-8** during a column radiation closure experiment over the Sea of Japan



ICARTT: COORDINATED ATMOSPHERIC CHEMISTRY CAMPAIGN OVER EASTERN NORTH AMERICA AND NORTH ATLANTIC IN SUMMER 2004



International, multi-agency (U.S.) collaboration targeted at U.S. regional air quality, pollution outflow, transatlantic transport, aerosol radiative forcing

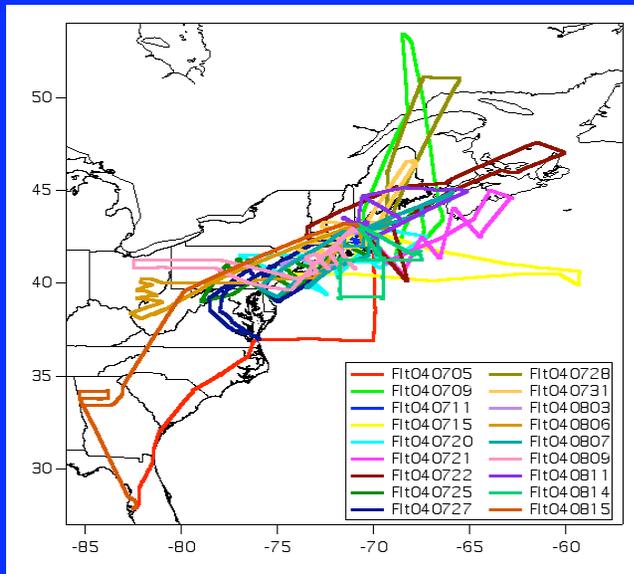
THE ICARTT AIRCRAFT COLLECTION



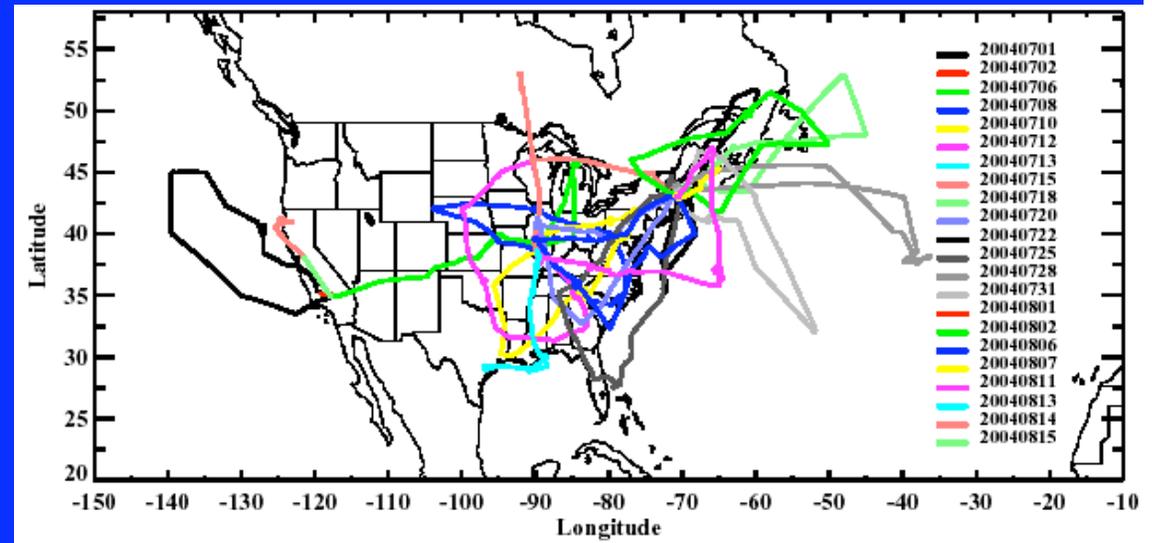
COORDINATED FLIGHT PLANNING DURING ICARTT

- Joint NASA/NOAA flight planning meetings in Portsmouth

WP-3D flight tracks



DC-8 Flight tracks



- Daily NASA/UK/DLR telecons to identify opportunities for transatlantic Lagrangian experiments

IN MILAGRO/INTEX-B, THE DC-8 AND C-130 AIRCRAFT WILL:

- share the same objectives**
 - have ~ similar capabilities**
 - operate from different locations**
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- Flight planning for both aircraft must be done at common meetings**
 - but we still need planning teams physically at both locations; solution must be videoconferencing**
 - Need agreement before the mission on the general approach for conducting flights**
 - Let's develop nominal flight plans this week, let's talk about our different approaches to flight planning**

A DAY IN THE LIFE OF THE FLIGHT PLANNING TEAM

- **-10 am: individual groups retrieve, analyze their products**
- **10 am - noon: daily flight planning meeting**
 - **Individual groups make brief presentations of their products, identify opportunities, make flight suggestions**
 - **Mission scientists synthesize suggestions into next-day flight decision, flight plans for both aircraft; discussion follows until flight plans gels**
 - **Brief discussion of longer-term flight planning; heads-up for future flights, guidance to team for looking at opportunities...**
- **Noon - 4 pm: solidify flight plans, prepare presentation to Science Team**
 - **Individual groups prepare products targeted at flight plan; bring up to mission scientists anything unexpected**
 - **Mission scientists confer with navigators/pilots to finalize flight plans**
 - **Mission scientists prepare presentations for Science Team meeting, web posting**
- **4pm: Science Team meeting**

MY TWO CENTS ABOUT WORKING WITH TWO AIRCRAFT HAVING SIMILAR CAPABILITIES

- In general, the capabilities of the two aircraft are best used by expanding horizontal coverage, with extensive vertical profiling by both aircraft
 - Use the two aircraft to characterize different source/outflow/transport regions, air masses at different aging times...
 - Using one aircraft as a remote sensor is not a good use of resources; it wastes the in situ capabilities
 - Dividing up the sampling responsibilities vertically is not a good idea either; both aircraft should conduct deep vertical profiling and fly into the juicy stuff.
- Plan at least three wingtip-to-wingtip intercomparison flight segments at different altitudes (vertical profiles are great); two should be very early in the mission
 - Make clear to aircraft crews that wingtip-to-wingtip comparisons are on the menu; pilots need to meet beforehand
 - Have a scientist in the field be responsible for analysis of intercomparison results; prompt submission of data is essential