ACCLIP: Asian Summer Monsoon Chemical and Climate Impact Project

Background: ACCLIP is an interagency field campaign to investigate the transport of pollutants and other gases from the Asian Summer Monsoon (ASM) region to the global atmosphere. Two aircraft (NASA WB-57 and NCAR G-V) were deployed together in South Korea from late July through early September 2022 to obtain a comprehensive suite of dynamical, chemical and microphysical measurements in the ASM outflow. A key objective was to determine the impact of ASM uplifted air on stratospheric ozone chemistry and global climate.

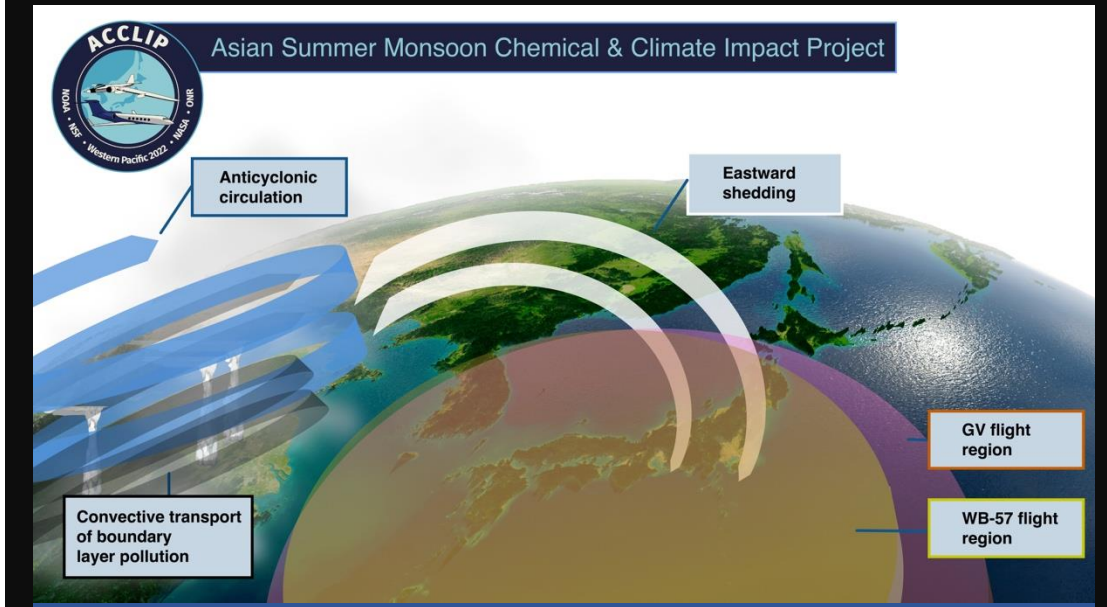
Ames played leadership roles in forecasting and flight planning, operation of two major instrument payloads, and project management.

Early Findings: The NASA WB-57 successfully completed 15 science flights to sample ASM air that was transported eastward into the Korean and Japanese airspace. The outflow from strong monsoon convection over the most polluted boundary layer on Earth appears to have distinct chemical signatures in the upper troposphere and lower stratosphere that reflects the combination of pollution from surface sources, convective pumping, and subsequent photochemical processing.

Next Steps: Data from this summer's deployment are currently being calibrated and quality controlled for public archival. The science team will discuss preliminary findings and analysis ideas at a meeting this November. These measurements will be critical for determining the radiative impact of ASM air and for improving chemistry-climate interactions in global climate models.

https://espo.nasa.gov/acclip

Team photo in front of the NCAR/NSF G-V (left) and the NASA WB-57 (right) at Osan Air Base, South Korea.



Depiction of the Asian Summer Monsoon anticyclone and the WB-57 flight operations sample region during ACCLIP.