The objectives of this flight were to sample one- and two- day old outflow forecasted to the E of VER and over the Yucatan, respectively. A secondary objective was to sample fires over the Yucatan.

This flight is the continuation of Wednesday’s flight during which we sampled fresh and one-day old outflow. We were hoping to sample the same air masses again today.

We flew East along 19 degrees 24’ N and saw Wednesday’s emissions as forecasted between 97 and 95 deg. W. We had to climb to 16000 feet over MMR 213 and lost the plume soon thereafter. We did a dive down to 10500 just E of MMR213 to sample a layer indicated by SABL just above this altitude. This might have been a biomass burning layer but this has to be confirmed by the measurements first.

We found pollution at the N tip of the Yucatan as predicted by the model and on out leg south Bob spotted a large fire at the surface near 19 deg. 52’N and 89 deg. 20’ W. We decided to return here after our run south and back up north to do our biomass burning spiral.

This spiral was very successful thanks to Henry’s flying we were able to sample the fire plume twice and then went through a layer of accumulated smoke just below the top of the BL around 10000 feet. NOy went up to 175 ppb in the fire plume. See the photo of the fire for an illustration of the plume (thanks to Jeff M. for taking the picture).

We went on to Merida and did another dive to 10500 feet on our way on an E-W track about 20’ south of our way out, where we were hoping to sample Wednesday’s emissions again. These were forecasted to have been transported further to the south during the course of the afternoon but never found it again.

We sampled MCMA pollution again when approaching the city from the SE but could not go on because strong convection was forming just to the W of Pico de Orizaba. We turned around and went back to VER.

Thanks to Henry, Bob, and John for a nice job on the helm. Henry and Bob did a great job fireplume-spotting followed by fireplume-hunting today!

Cheers,
Frank