

DISCOVER-AQ Outlook for Thursday, July 28, 2011

Very clean and dry air was encountered on today's flight (perhaps the cleanest of the mission) under the generally northwesterly flow. Tomorrow should start out rather clean in terms of O₃ and aerosol. However, by midday the winds will shift to southerly bringing in warmer and more humid air. Increased temperatures should lead to greater O₃ production in the afternoon and somewhat greater aerosol optical depth. Deep convection is quite active over the Great Lakes region today and cirrus outflow began showing up in our study region by late afternoon. We will need to assess the upper level cloud situation in the morning to determine if these clouds present an obstacle to our flights tomorrow. Conditions on Friday will become even hotter, more humid and more polluted. However, again we will need to assess the cloud situation, both convective outflow from upstream and mid-level clouds that may result from passage just to our north of small vorticity maxima. Local thunderstorm activity will likely develop Friday afternoon/evening, and we will also need to keep watch of that. A frontal system will likely become stationary over the region on Saturday and Sunday, leading to considerable clouds and shower activity.