

DISCOVER-AQ Outlook for Saturday, July 2, 2011 Flights

Forecast models expect low-level pollution to be on the increase tomorrow as the surface temperatures warm into the low 90s and the winds shift to the southwest from the northwesterly much cleaner flow of yesterday and today. Much of the study region will reach Code Orange (> 75 ppbv) ozone conditions tomorrow. Greatest surface ozone will likely be along the western shore of the Chesapeake Bay. Aerosol loadings should also increase with the increasing humidity. It appears that smoke from Canadian or SE US fires should not be significant on Saturday in our region. The most important issue for the flights tomorrow is high-level cloudiness. Most of the models (NAM, GFS, GEOS-5) bring in broad cirrus decks by early afternoon resulting from upstream convective outflow. The Canadian GEM model is the exception with only the outflow from one thunderstorm in eastern PA bringing us cirrus. Convection is occurring today over MN, WI forced by a frontal system moving through that region. The frontal system will be over the Great Lakes tomorrow, with possible convection being forced over Ohio and western PA. The upper tropospheric outflow from the MN/WI storms of today will be located over Quebec tomorrow afternoon, so that is not an issue for us. The upper-level outflow from OH/PA convection tomorrow will be directed toward the south as evidenced by the forecast flow at 300 hPa. The Canadian model forecasts scattered convection from eastern PA into New England, but we believe this to be very uncertain. If these storms were to occur the resulting cirrus would be rapidly transported our direction. Therefore, we have decided to propose flying tomorrow, but with an important update in the forecast at 8 AM tomorrow morning.