A frontal system remains stalled just south of the Baltimore-Washington area today, leading to considerable clouds at multiple levels. All of the forecast models show high pressure building over the upper Midwest today and tonight which will lead to clearing over our study region by tomorrow morning. Following the early morning clearing, the day should only have scattered clouds. The cloud outlook will be updated at 3:30 AM tomorrow. Sky conditions will continue with only scattered clouds into Wednesday morning, but with increasing clouds during the Wednesday afternoon as the frontal system moves back to the north. Ozone is forecast to be in the upper moderate range tomorrow over the region. The GEOS-5 aerosol forecast produces AOT up to nearly 0.9 over the southern part of the study region with a combination of smoke from fires and regional sulfate. Recommendation is to fly tomorrow, with an update at 3:30 AM.
Recommendations for July 5th-July 7th:

Tues., July 5: **Fly (looks good all day).** Check on progress of early AM clearing

Wed., July 6: **Perhaps Fly (early flight again?)—clouds on the increase in afternoon**

Thurs., July 7: **Perhaps No Fly - more clouds, possible Tstorms**

K. Pickering, C. Flynn, G. Garner
July 4, 2011
Wx Verification: 03 July

- Clouds from pre-frontal trough in AM
- Convection in WV and western MD in PM
- Hazy morning with low visibility
- “Few” clouds at 1400 and 1700 EDT, otherwise overcast
• Current conditions at BWI at 11:00am
  – Current air quality is upper Good for O3; Moderate for PM2.5 at some sites
  – Overcast. 81°. 1012mb. moderate humidity
Tuesday: Front remains stalled to south of region. Clear and warm behind front.
Wednesday: Front may begin to move northward as warm front. High over OH has disappeared.
-Clear skies all day Tuesday
-BL ~ 5,200 ft

-Low clouds and precip on Wednesday and Thursday
Tuesday 8am: Clear skies, clouds to south of region
Tuesday (2pm): Remains clear
• Clouds moving SSE early Tuesday AM.
• Cloud free over northern track 0100 EDT
• Cloud free over southern track 0600 EDT
Wednesday 8am: Clear in morning, however NAM places clouds in region by evening
Wednesday 2pm: GFS keeps region under 50% cloud cover for afternoon
Tuesday: Air quality in the upper moderate range. Both daily maxs. in the upper 60s ppbv.
Tuesday (4pm): Should not see high afternoon pollution (good news for morning flight).
Today’s AOT forecast: impact of Canadian fires and regional sulfate
Tuesday afternoon: smoke from NC wildfires impacts region
Wednesday: NC smoke continues to impact region
GEOS-5 Envirogram through 08 July 2011

Beltsville

- High clouds diminishing into Tuesday AM.
- Increasing low clouds on Tuesday afternoon.
- Aerosol peak from sfc. to 9000 ft at 0700 – 1400 EDT.
- Aerosol peak from 5000 - 9000 ft overnight.

- Wednesday AM looks relatively clean and clear of clouds.
Trajectories indicate southern Great Lakes as source region for tomorrow morning’s air.

Air subsiding over west-central PA before reaching flight track.

Source of aerosols: SO2 from coal-fired power plants?