

## DISCOVER-AQ Outlook for Friday, July 8 and Saturday, July 9, 2011

A Science Team Meeting will be held in Hampton on Friday. Therefore, no flights will be conducted. Weather does not look good in the study region for Friday anyway with considerable cloudiness associated with the approaching frontal system and likely afternoon deep convection. Saturday flights are iffy because of likely residual cloudiness behind the front. This may be in the form of considerable shallow convection. Sunday and Monday look much better for flying with clear skies and pollution buildup. Therefore, we recommend no flights for Saturday, with the possibility of back-to-back Sunday and Monday flights.

# Flight Recommendation 09-11 July 2011

## FLY PM on Sun / Mon back-to-back

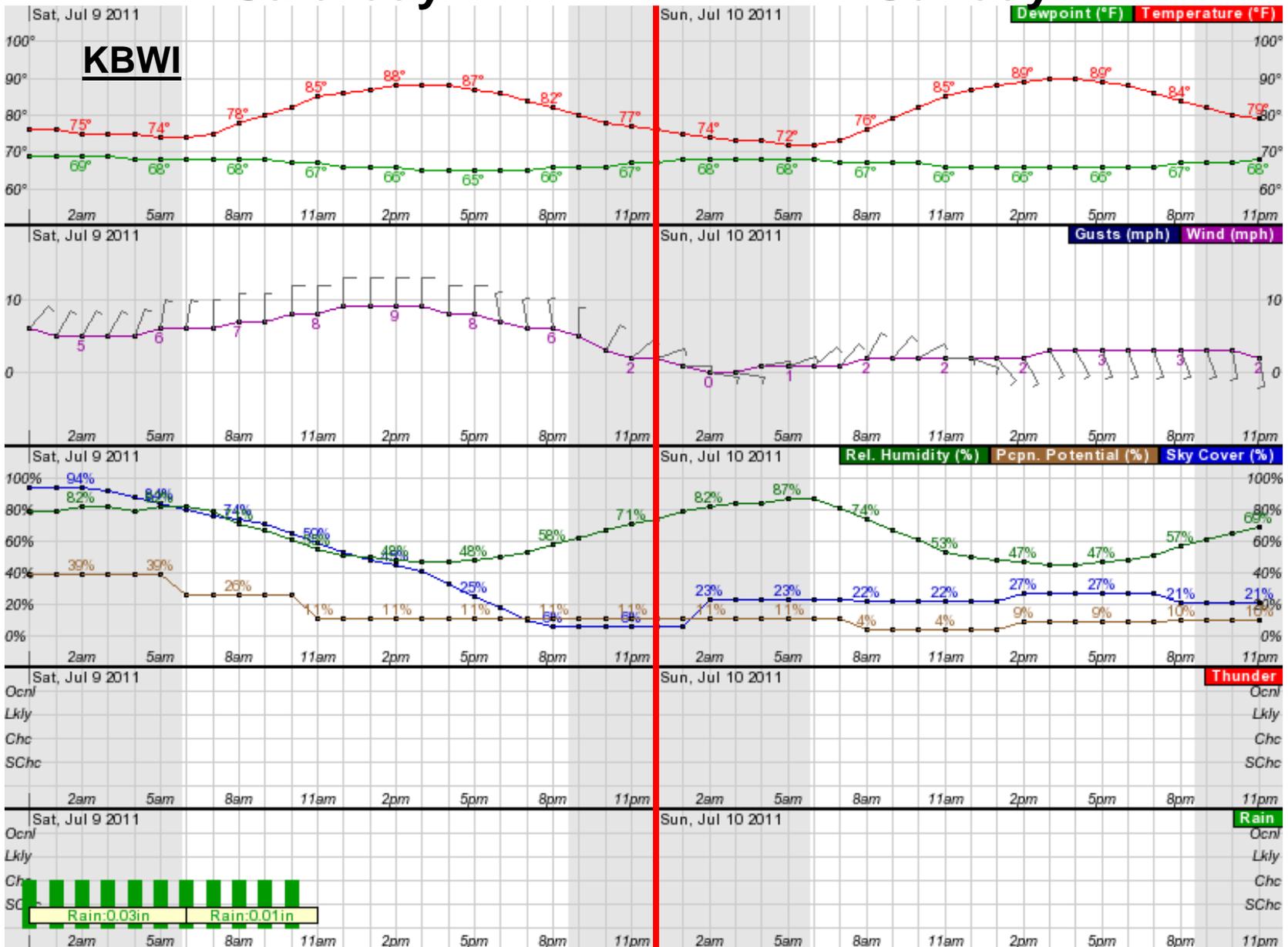
- Friday: **NO FLY** – Meeting in Hampton
- Saturday: **Very iffy** – Conditions may clear, but may want to consider back-to-back flights on Sunday and Monday instead
- Sunday: **FLY** – Clear skies; AQ stagnation
- Monday: **FLY** – Stagnation continues. If front progression is slow, should have a great flight in afternoon! Watch for high clouds in advance of next front.



# NAM-MOS: 09 - 10 July 2011

## Saturday

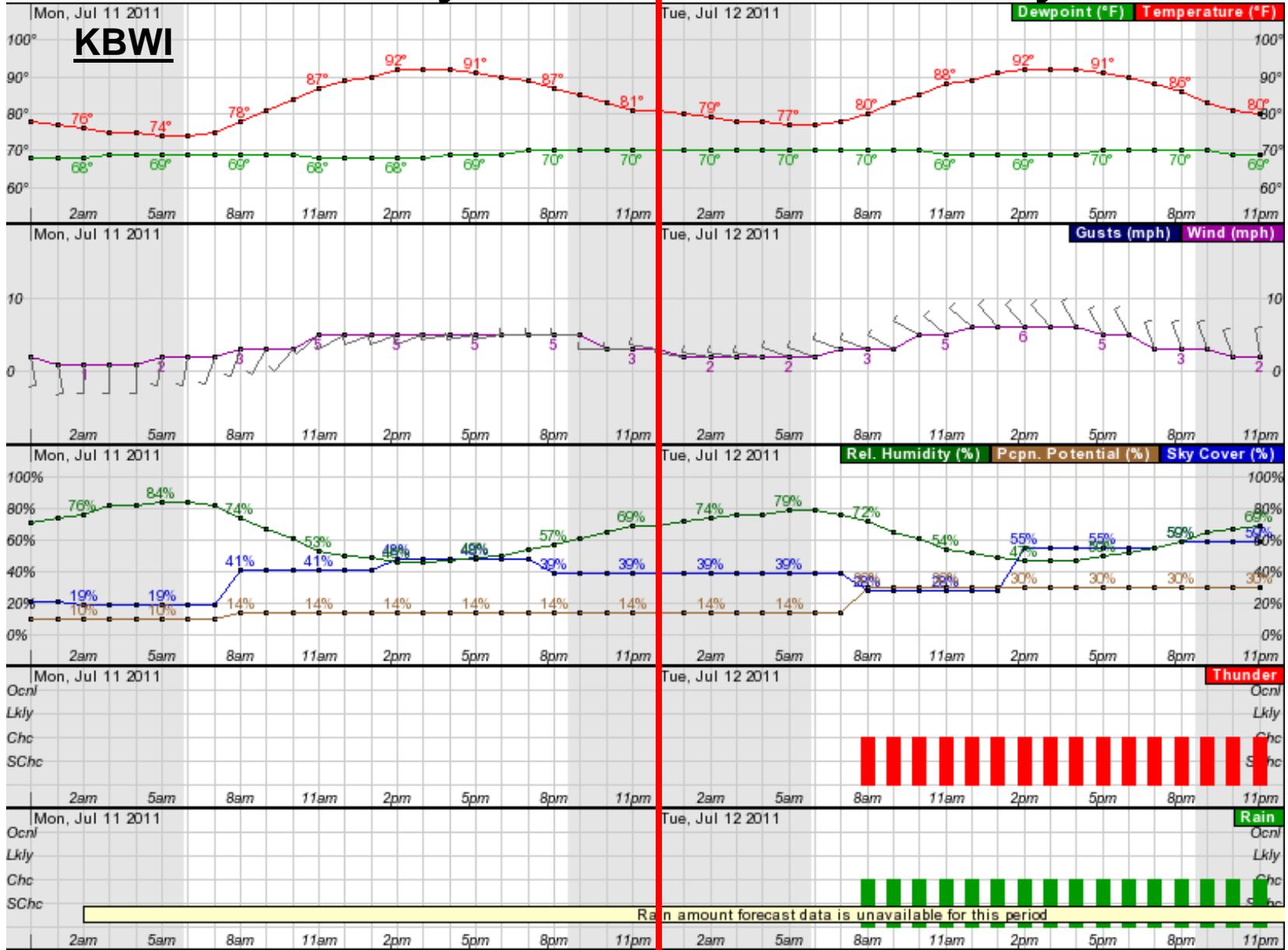
## Sunday



# NAM-MOS: 11 - 12 July 2011

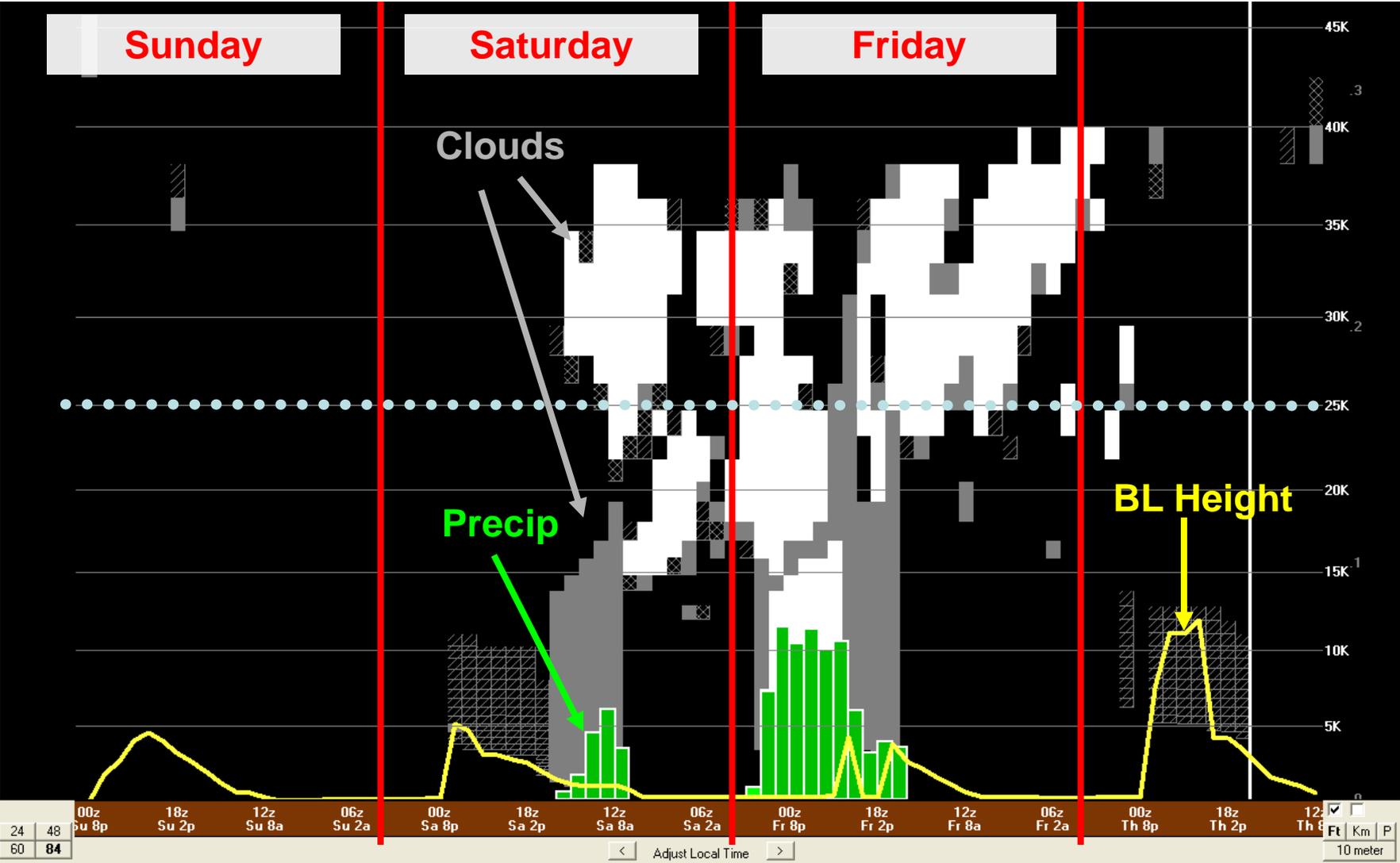
## Monday

## Tuesday



Rain amount forecast data is unavailable for this period

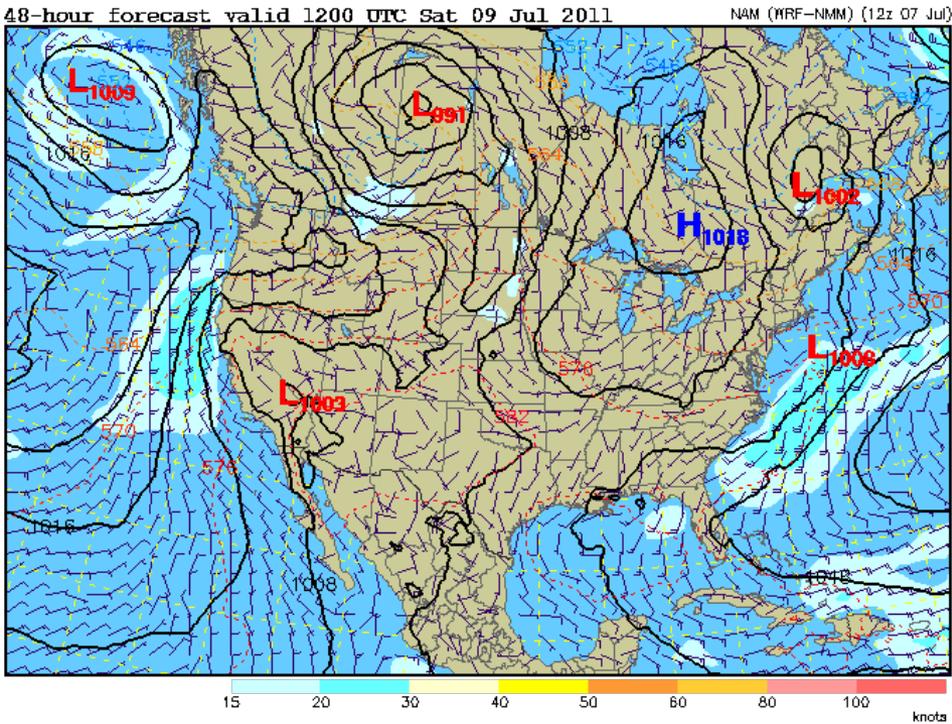
# Bufkit – NAM (12 UTC 07 July)



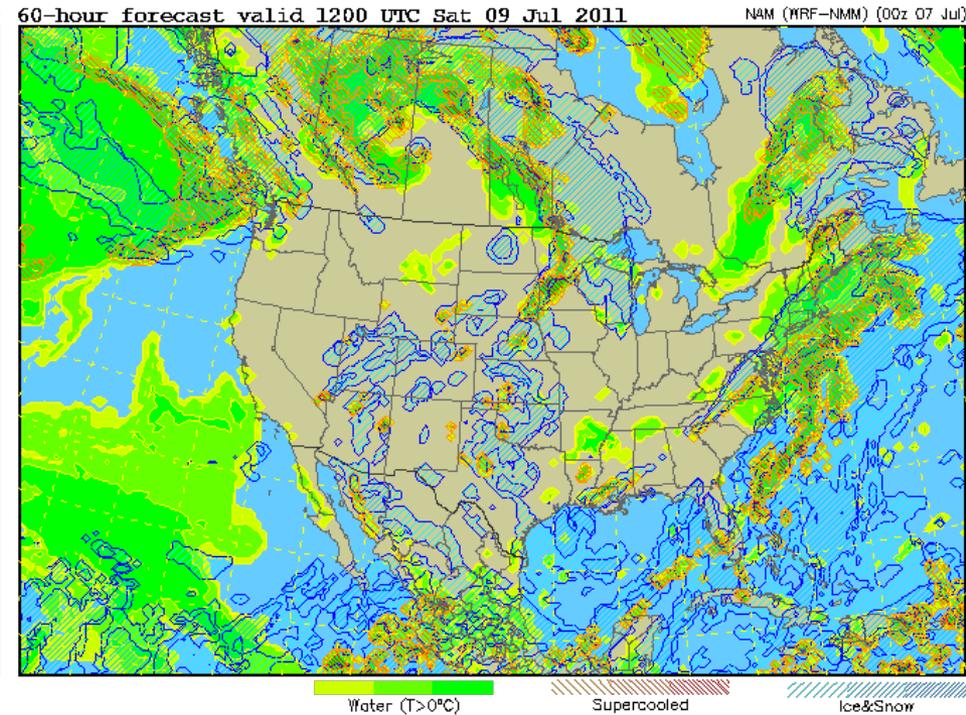
- Clouds and showers on Saturday morning
- Clear on Sunday
- Thin low-level clouds in the afternoon
- BL heights just under 5,000 ft on Sat. and Sun.

# NAM – MSLP and Clouds Saturday Morning

Surface (10m) Wind Speed (knots) / MSLP (mb)



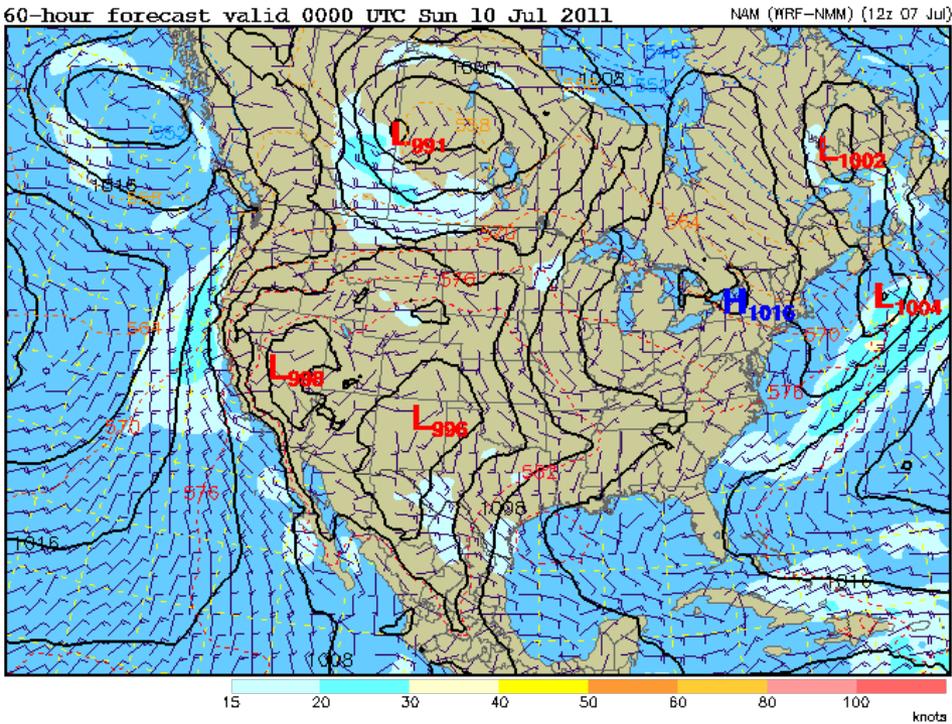
Integrated liquid and frozen hydrometeors (all levels)



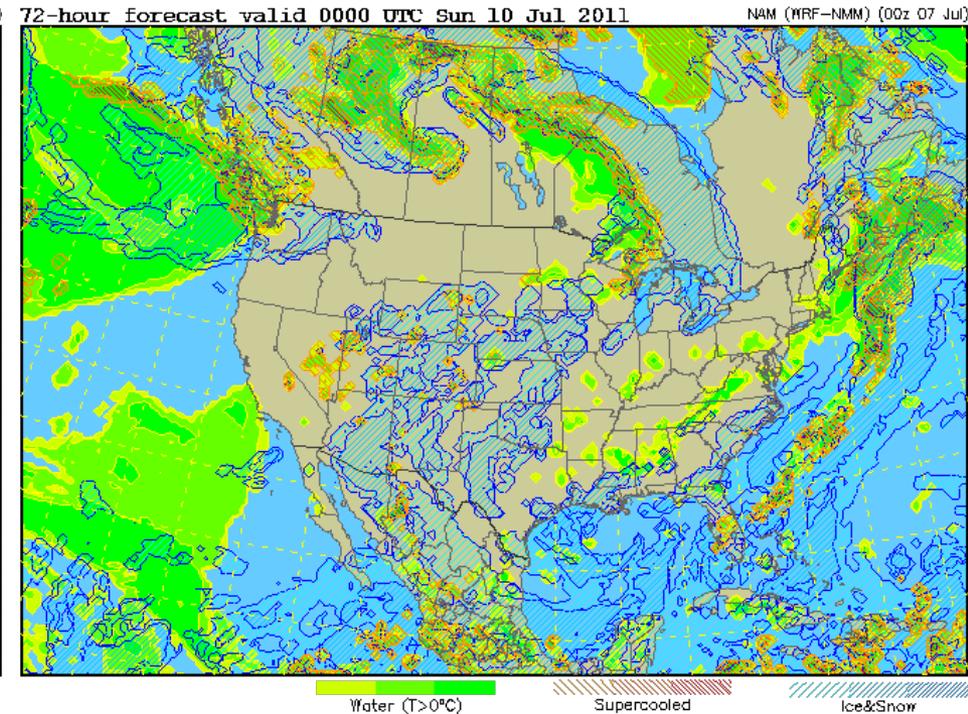
- Front passes through Saturday morning.
- Mid and high level clouds lingering behind the front.

# NAM – MSLP and Clouds Saturday Afternoon

Surface (10m) Wind Speed (knots) / MSLP (mb)



Integrated liquid and frozen hydrometeors (all levels)

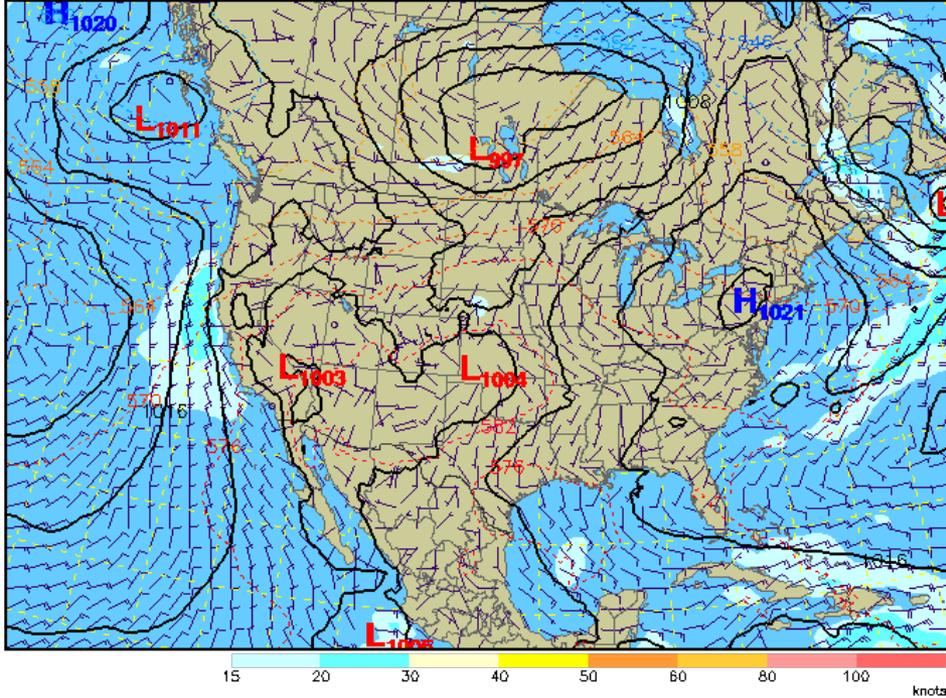


- Slight chance for afternoon convection, otherwise high pressure keeps the area clear

# NAM – MSLP and Clouds Sunday Morning

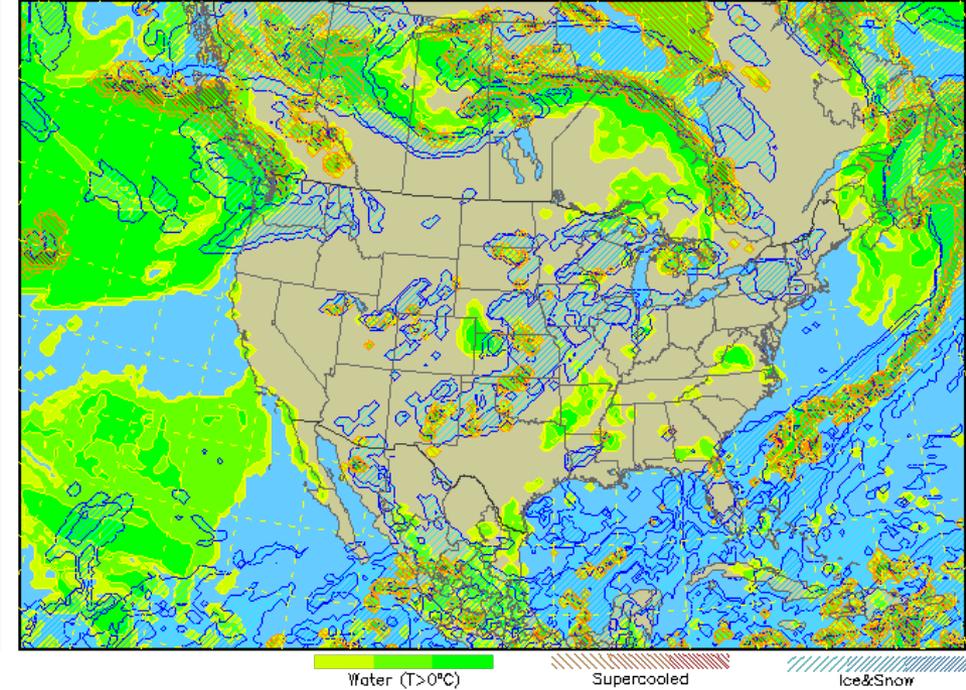
Surface (10m) Wind Speed (knots) / MSLP (mb)

72-hour forecast valid 1200 UTC Sun 10 Jul 2011 NAM (MRF-NMM) (12z 07 Jul)



Integrated liquid and frozen hydrometeors (all levels)

84-hour forecast valid 1200 UTC Sun 10 Jul 2011 NAM (MRF-NMM) (00z 07 Jul)

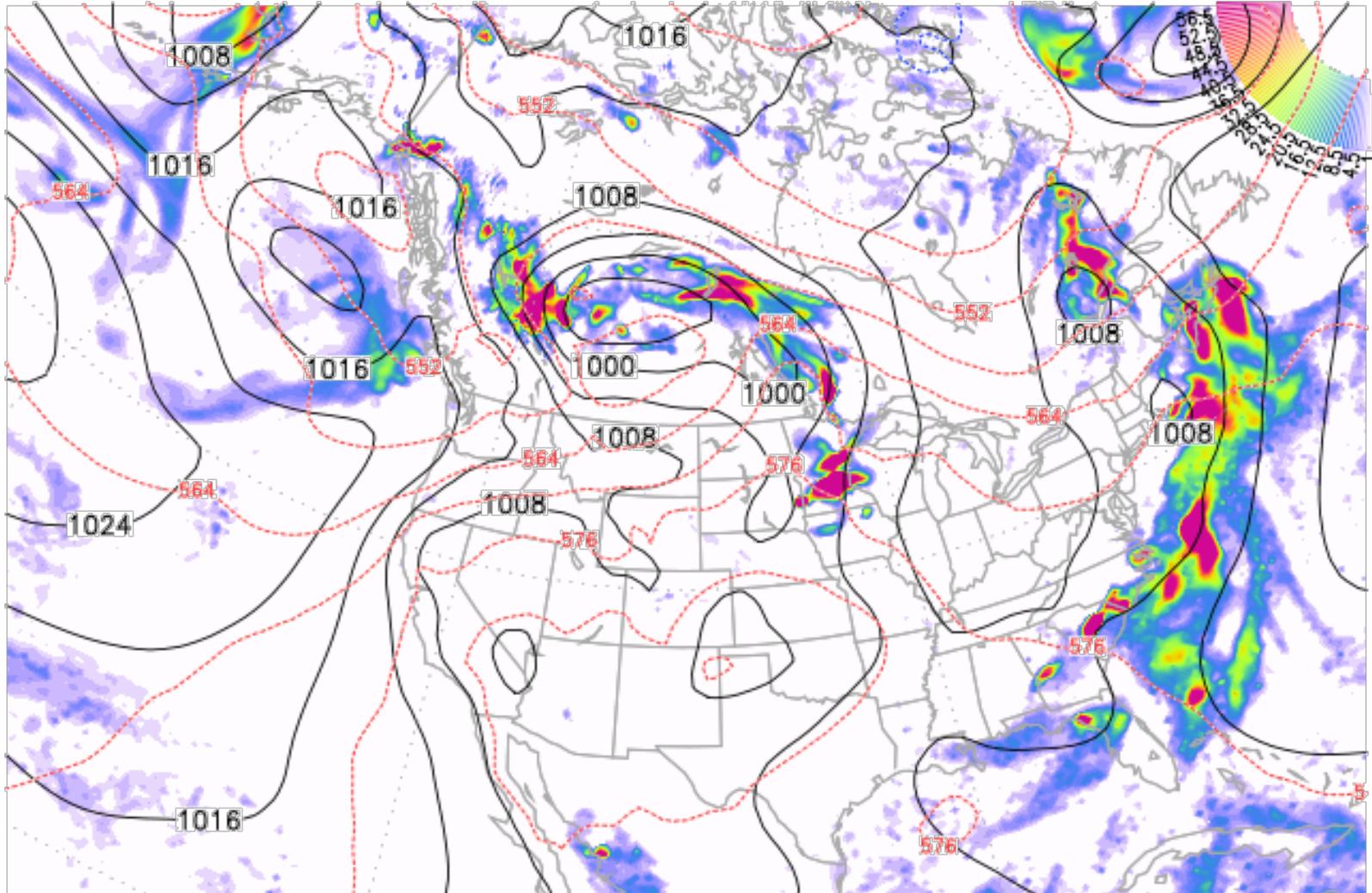


- Calm / light winds under surface high pressure may lead to AQ stagnation.
- Haze / fog in the early morning, clearing out into the afternoon.
- Very slight chance for afternoon convection, otherwise clear skies!

# GEOS-5: Saturday Morning

NASA/GMAO – GEOS-5 Forecast Initialized on 00z 2011-07-07

Precip [mm/day], SLP [mb] and 1000-500mb Thickness [dam]

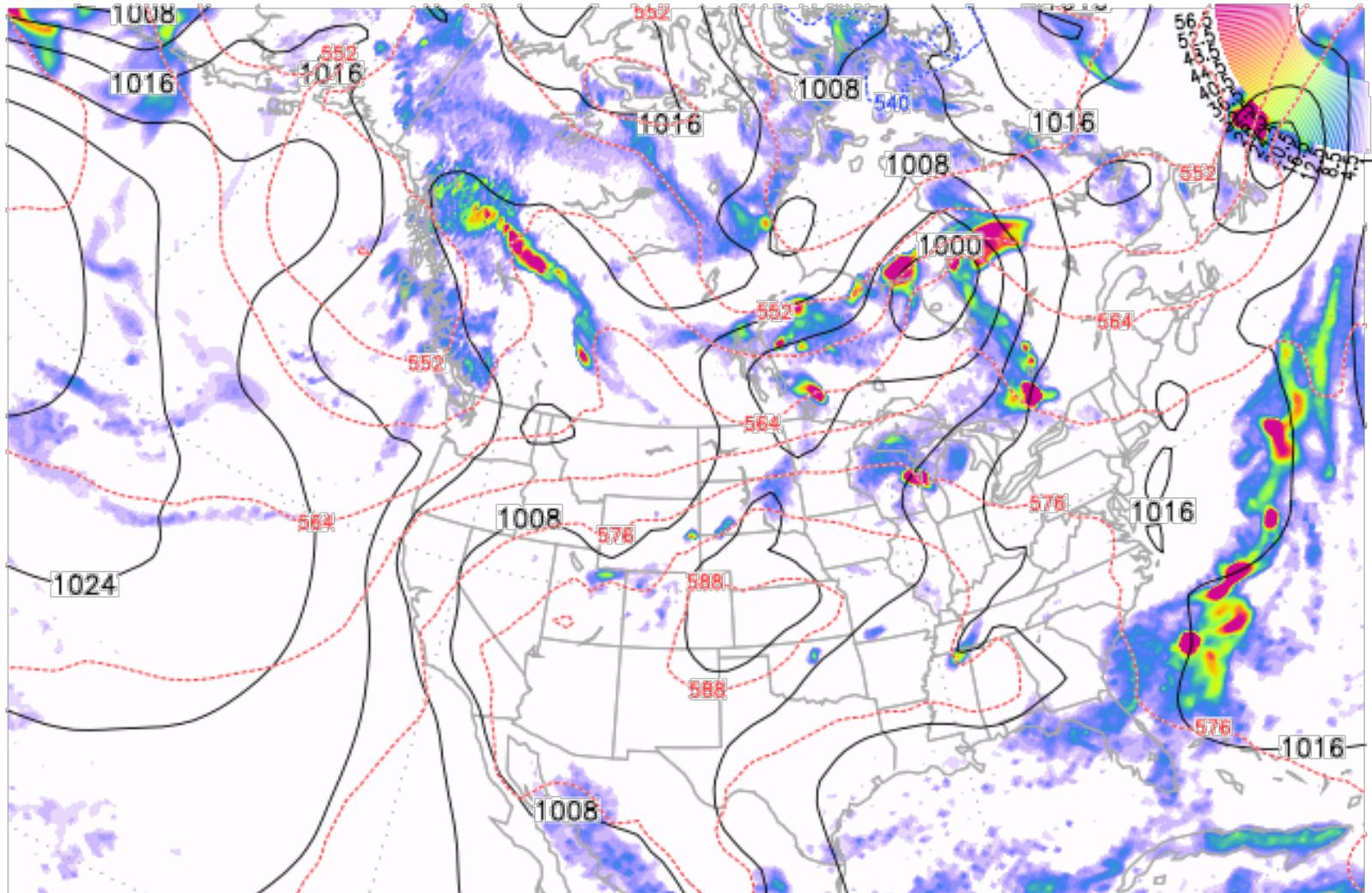


60 hr forecast valid Sat 12z 2011-07-09

# GEOS-5: Sunday Afternoon

NASA/GMAO - GEOS-5 Forecast Initialized on 00z 2011-07-07

Precip [mm/day], SLP [mb] and 1000-500mb Thickness [dam]

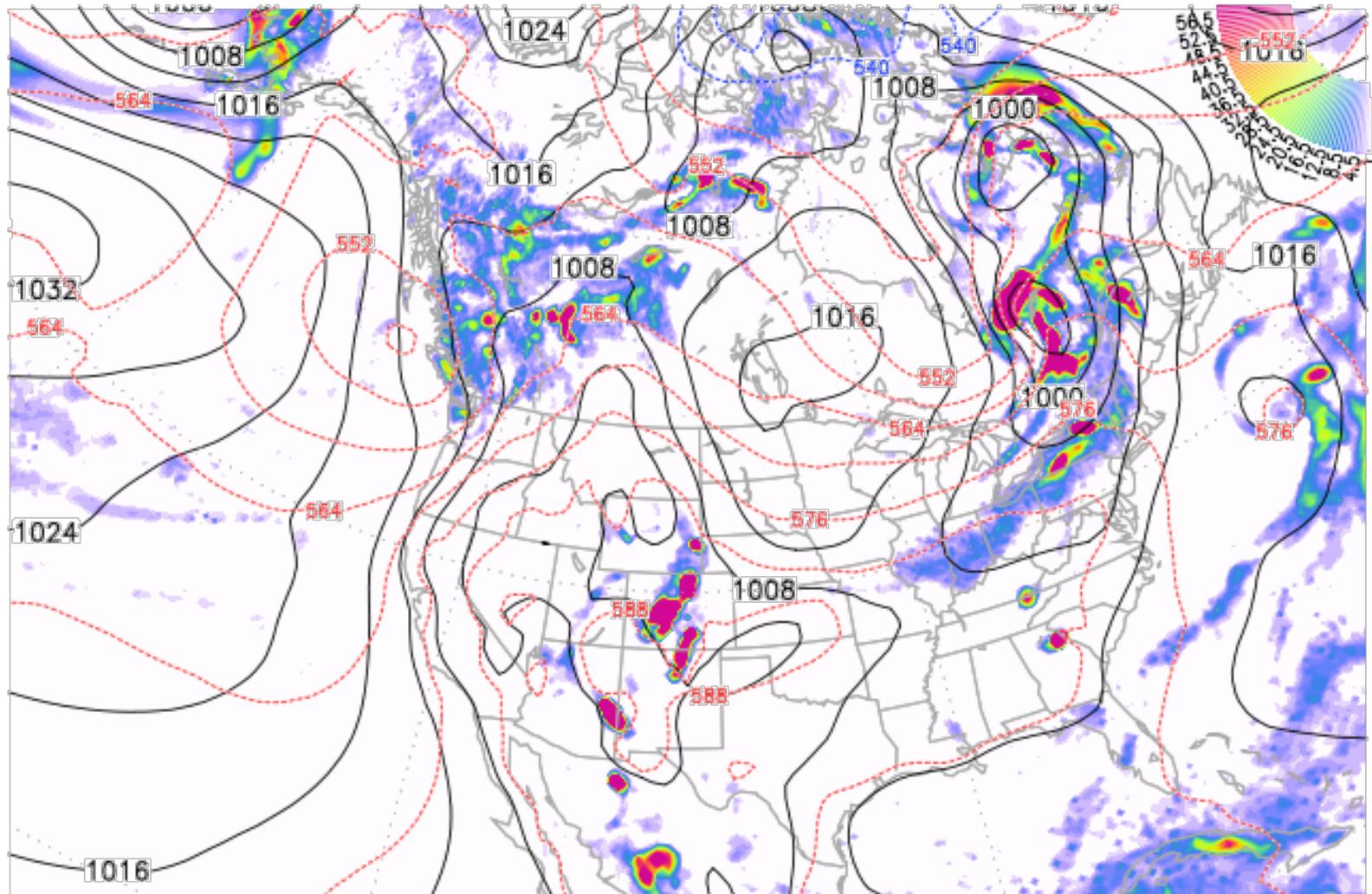


90 hr forecast valid Sun 18z 2011-07-10

# GEOS-5: Monday Evening

NASA/GMAO — GEOS-5 Forecast Initialized on 00z 2011-07-07

Precip [mm/day], SLP [mb] and 1000-500mb Thickness [dam]

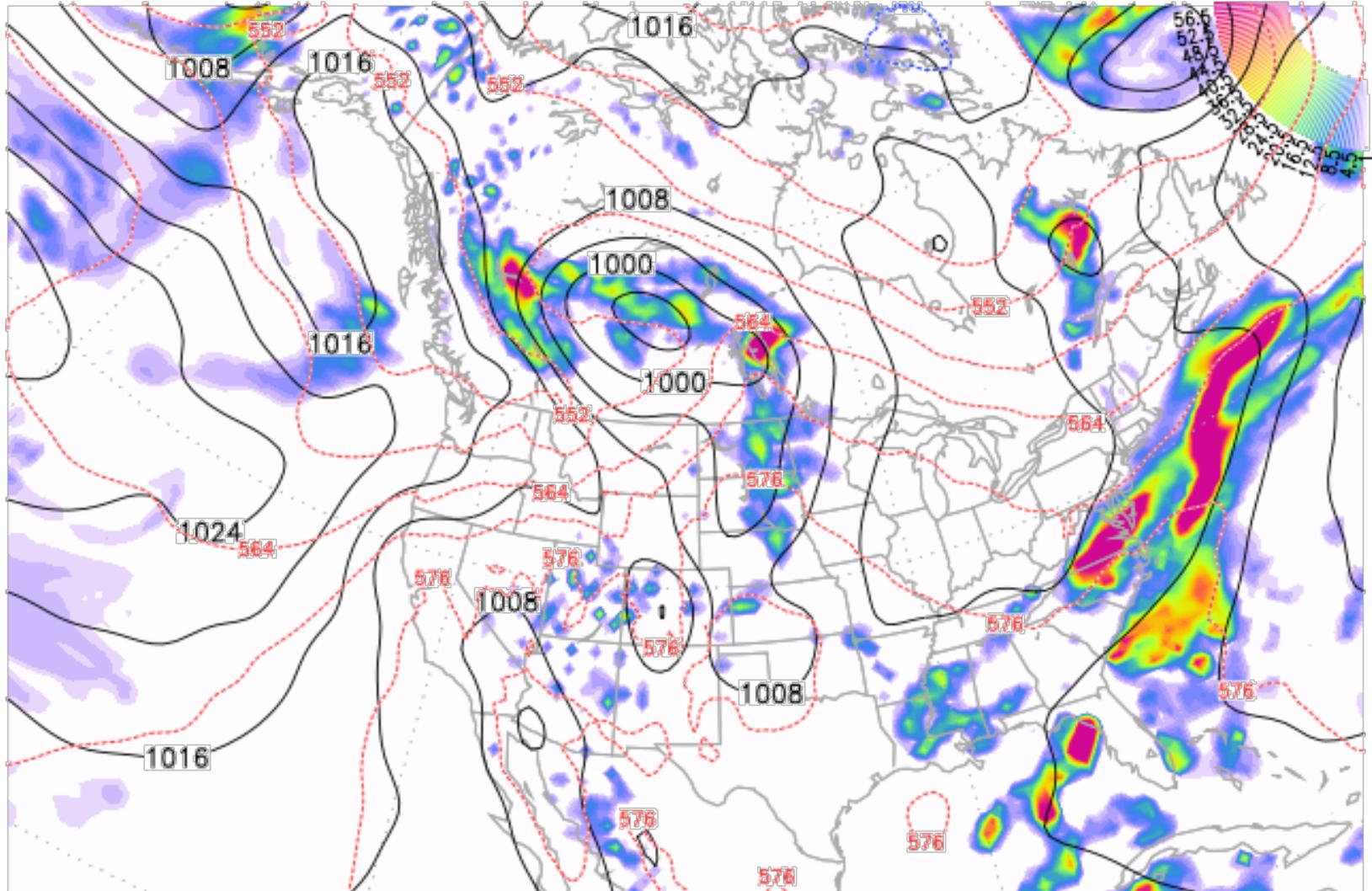


120 hr forecast valid Tue 00z 2011-07-12

# GFS: Saturday Morning

NOAA/NCEP – GFS Forecast Initialized on 00z 2011-07-07

Precip [mm/day], SLP [mb] and 1000–500mb Thickness [dam]

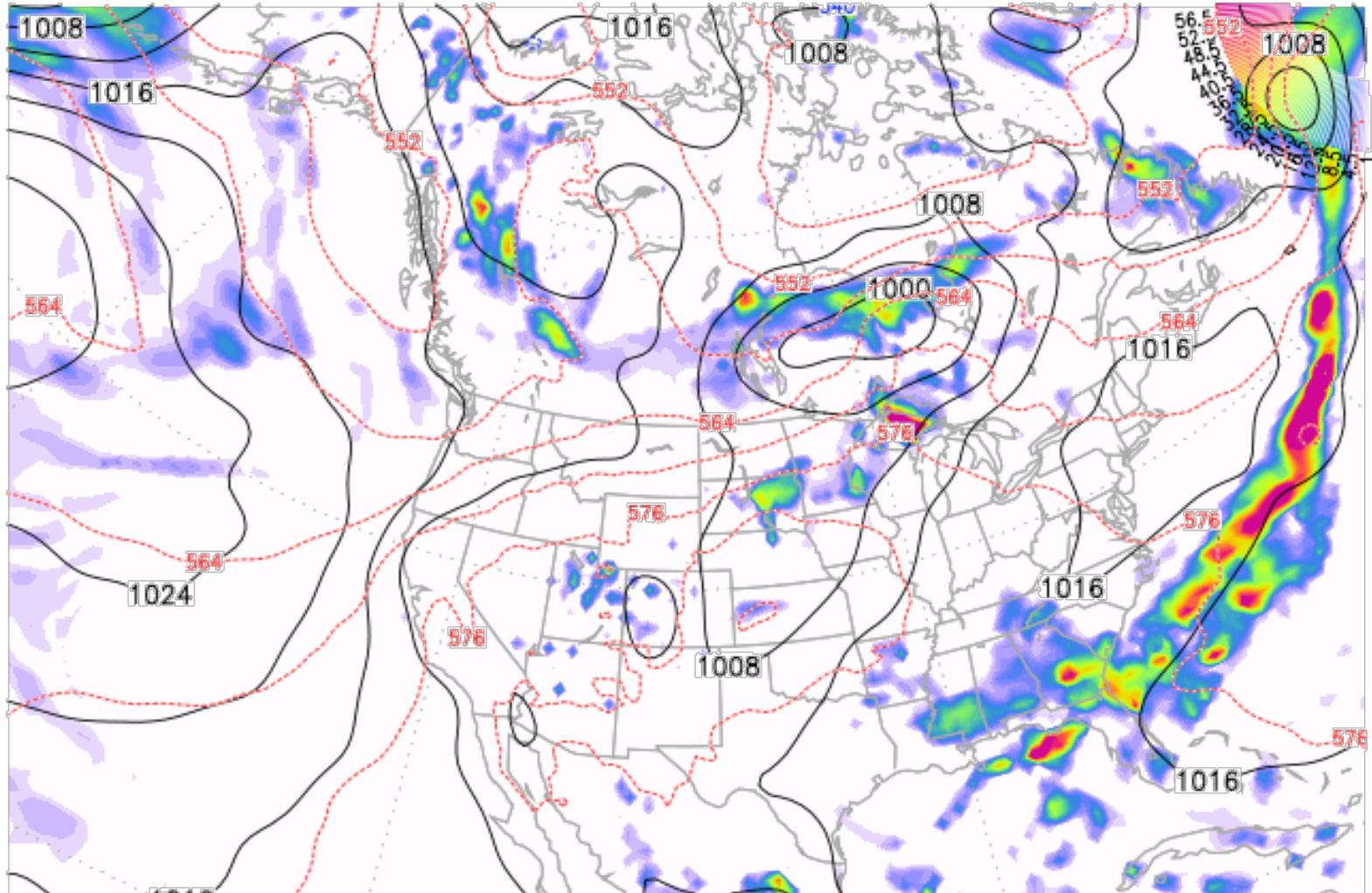


60 hr forecast valid Sat 12z 2011-07-09

# GFS: Sunday Afternoon

NOAA/NCEP - GFS Forecast Initialized on 00z 2011-07-07

Precip [mm/day], SLP [mb] and 1000-500mb Thickness [dam]

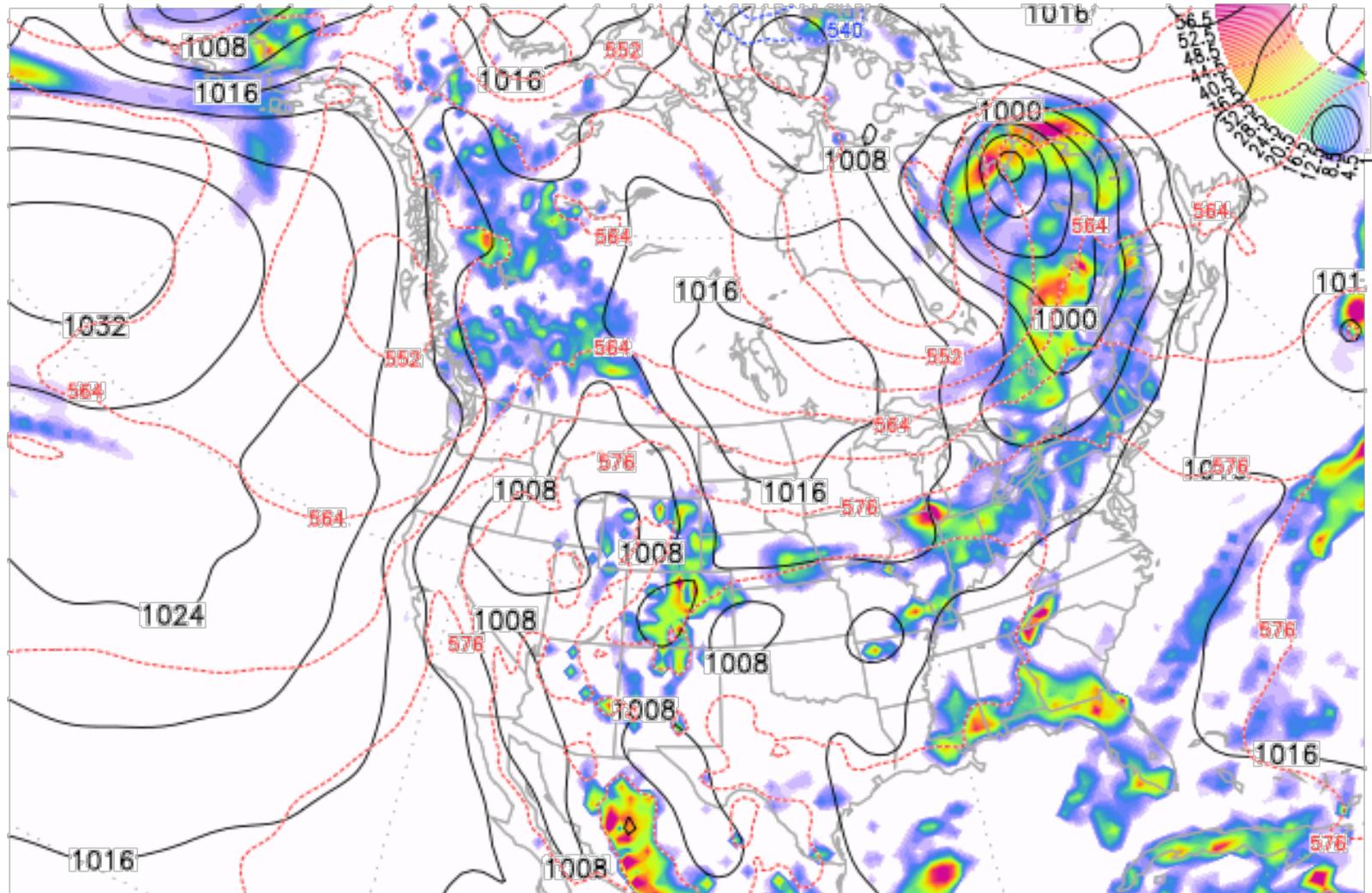


90 hr forecast valid Sun 18z 2011-07-10

# GFS: Monday Evening

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Precip [mm/day], SLP [mb] and 1000–500mb Thickness [dam]



120 hr forecast valid Tue 00z 2011-07-12

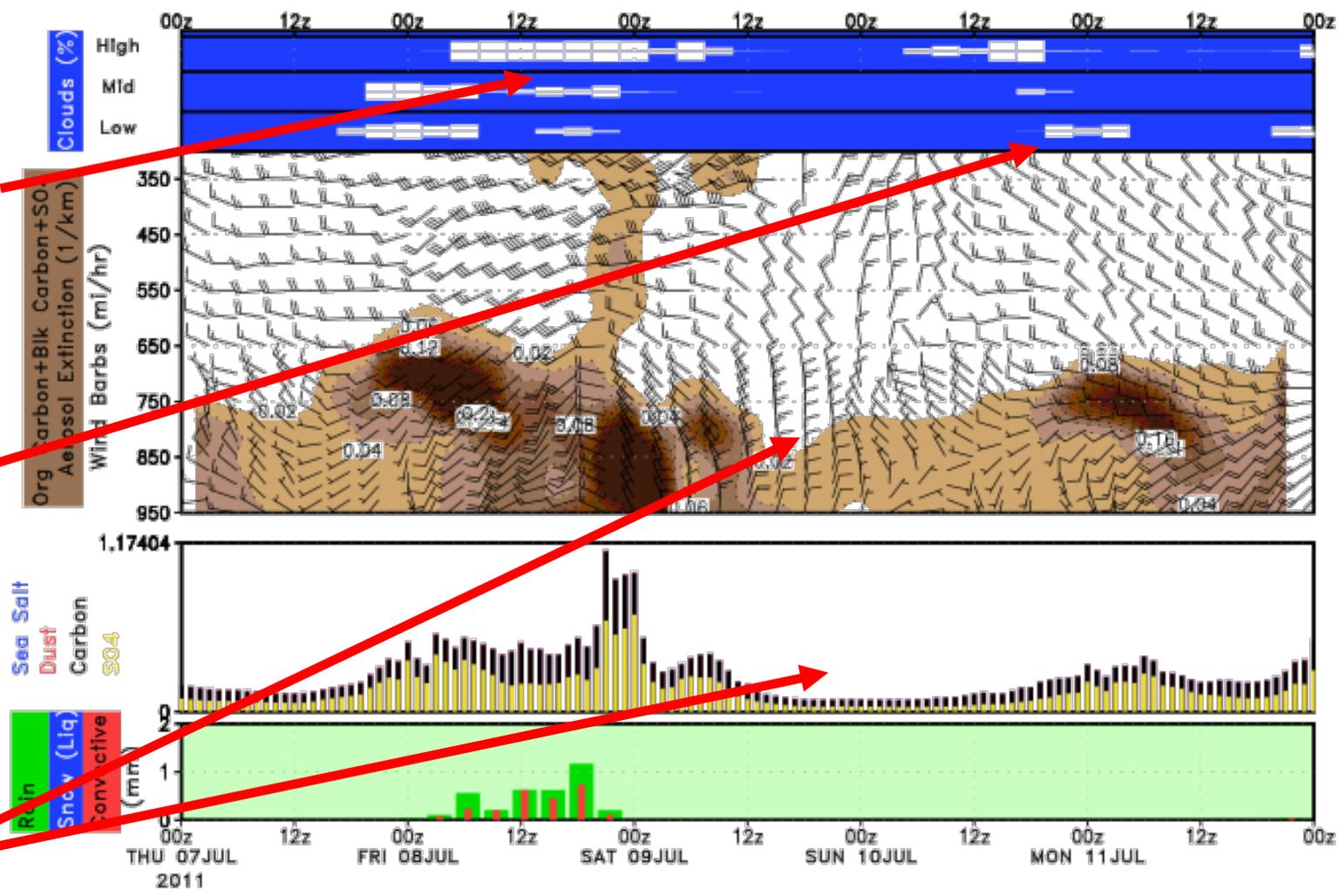
# GEOS-5 Envirogram through 11 July 2011

## Beltsville

- High-level clouds on Saturday AM. Clear in afternoon.

- Chance for low-level afternoon clouds on Sunday.

- Relatively low aerosol Saturday afternoon



- Precip free Saturday through Monday

# Discussion

- Front passes through Friday night/Saturday morning
  - Mix of mid and upper level clouds still on Sat. AM -
- Lingering clouds give way to clearer skies on Saturday afternoon, but instability behind front may produce some post-frontal convection
  - Could have good flight conditions, but may want to hold off.
- Hazy Sunday morning, clearing out in the afternoon
  - Slight chance for convective clouds in the afternoon, but not enough to deter a flight
  - High pressure will likely cause AQ stagnation → high ozone likely
- Monday morning looks clear - stagnation continues
  - Timing the front will be the forecast challenge for Monday late in day
  - NAM-MOS times the frontal passage in late afternoon, but model may be fast
  - If front holds off into Monday evening (as GEOS-5 and GFS are predicting), the afternoon may be great to fly. Just may need to worry about high clouds.