

An aerial satellite-style photograph of a tropical cyclone. The storm's eye is a bright white circle in the center, surrounded by a dense, swirling cloud structure. The surrounding ocean is a deep blue, and the landmasses to the left are green and brown. The text "Got Rain?" is overlaid in the center of the storm's eye area.

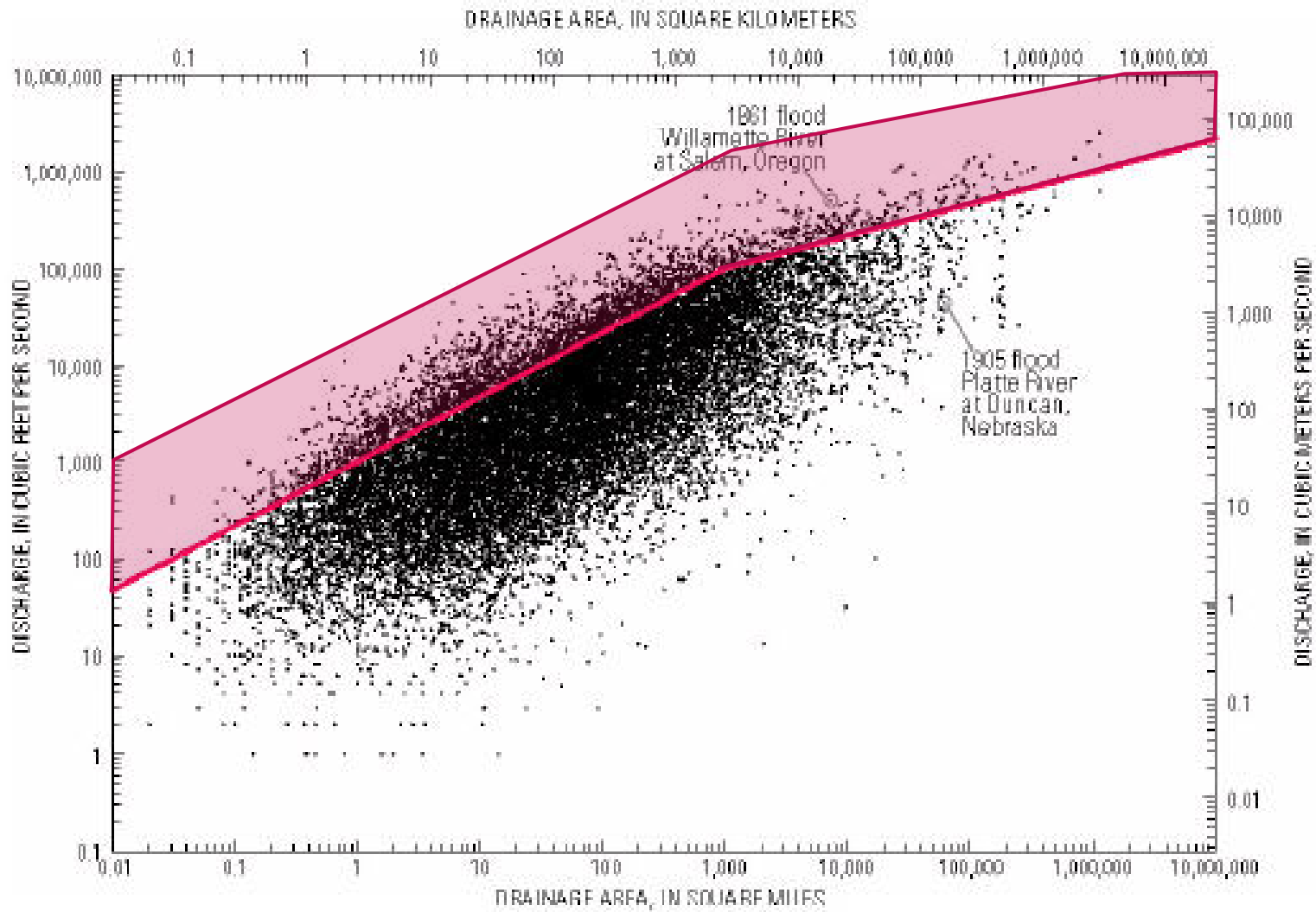
Got Rain?

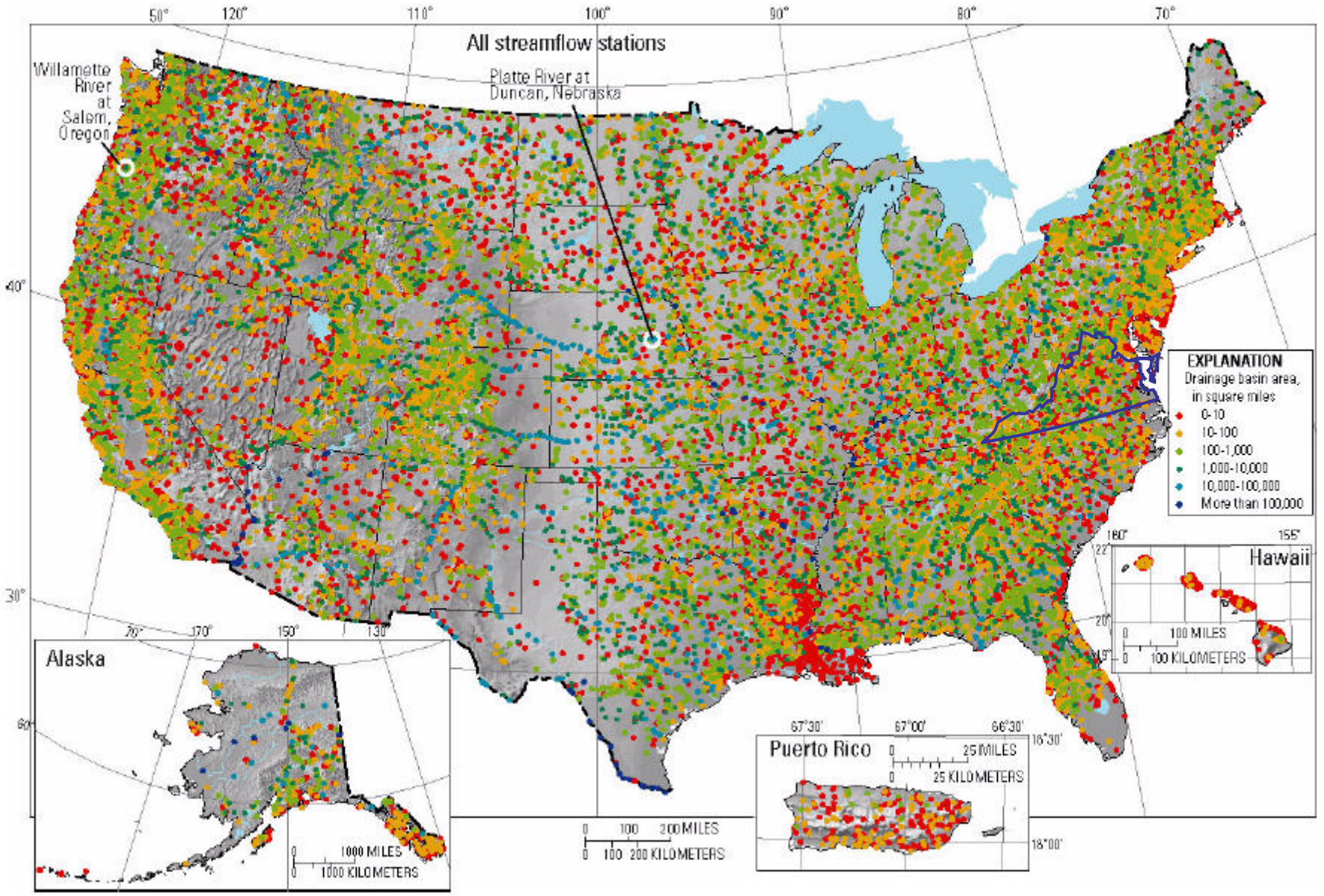
Large Floods in the United States: Where They Happen and Why

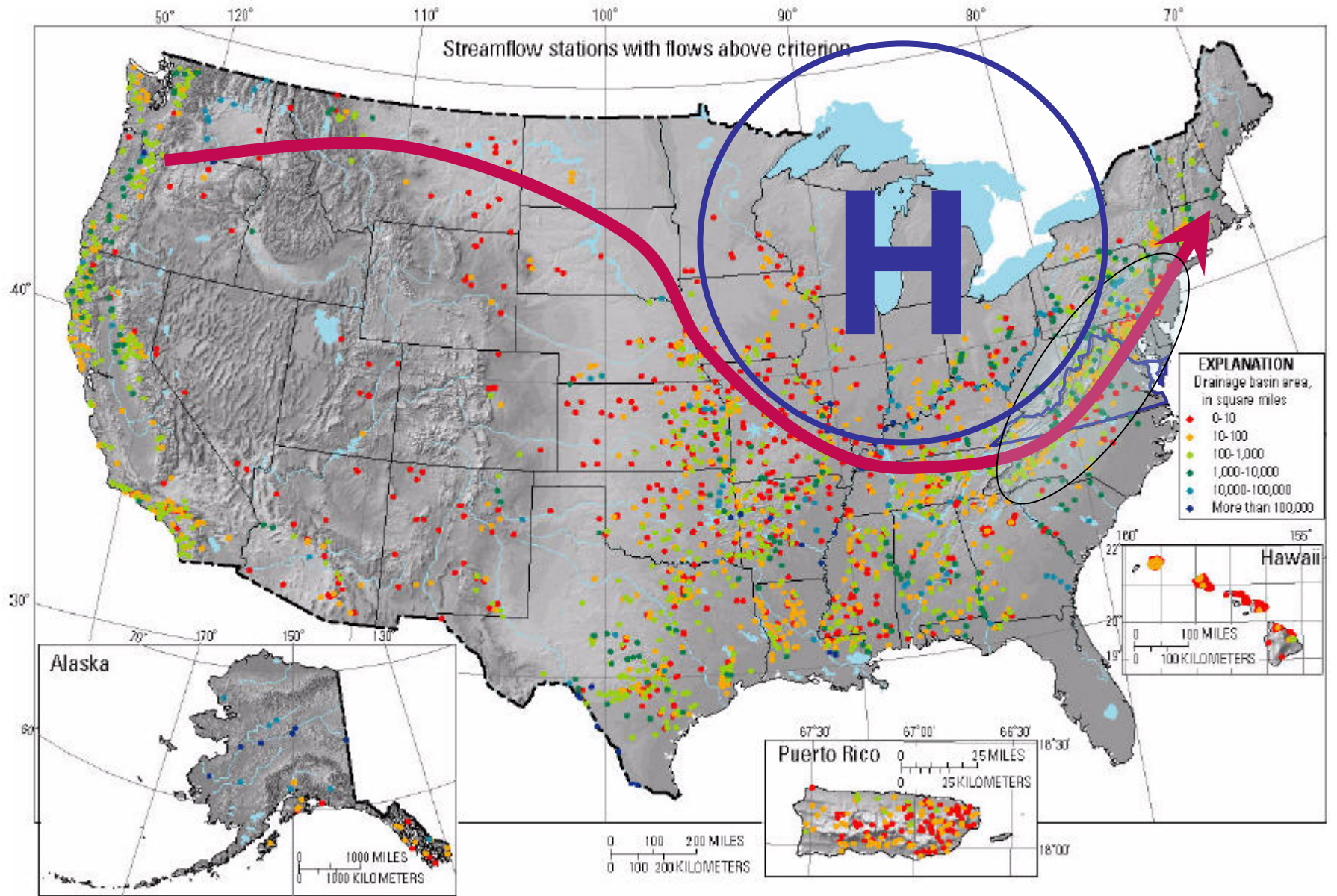
U.S. Geological Survey Circular 1245



U.S. Department of the Interior
U.S. Geological Survey







JUL 13, 2006 5:12 pm

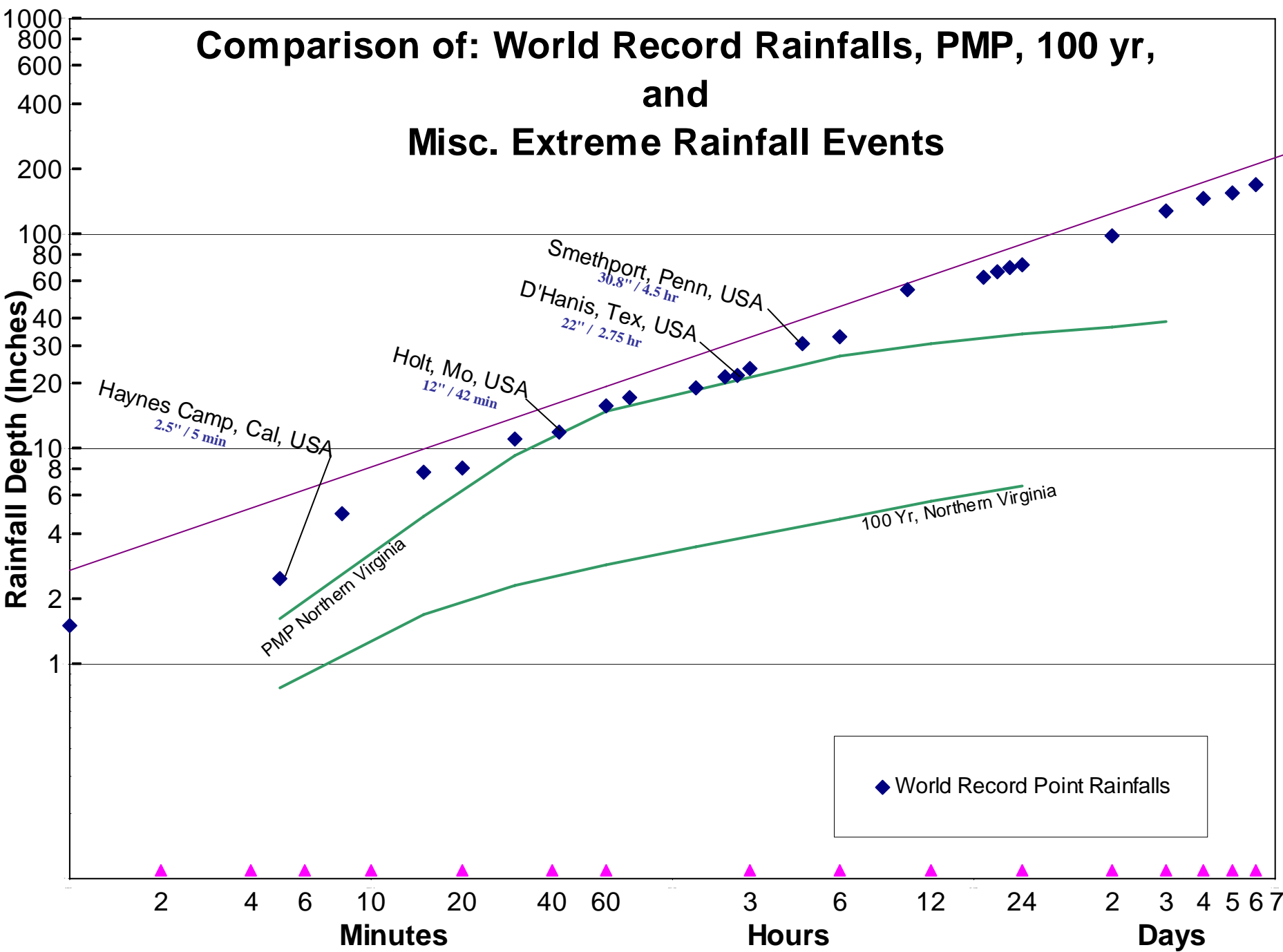
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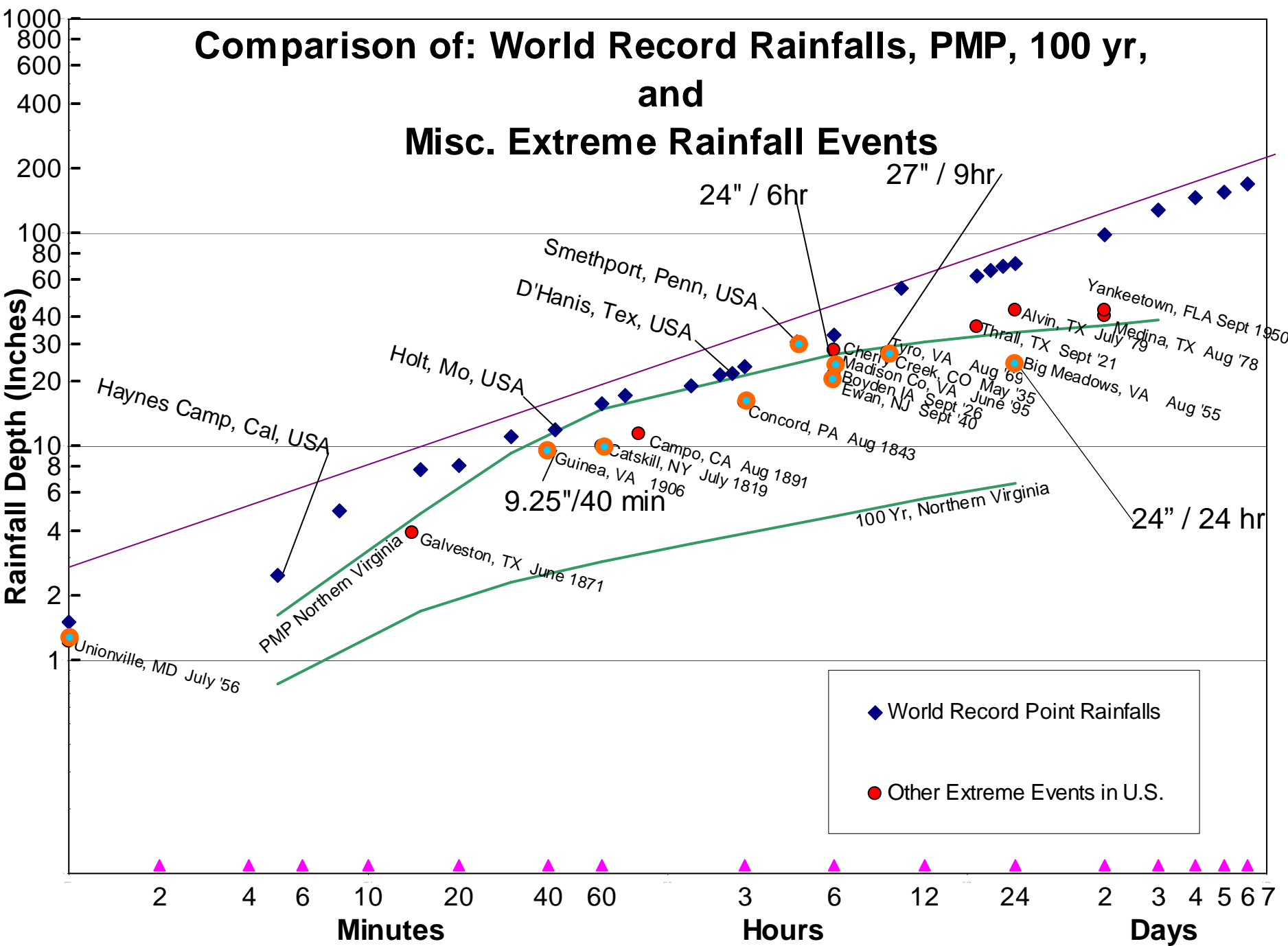


Comparison of: World Record Rainfalls, PMP, 100 yr, and Misc. Extreme Rainfall Events



◆ World Record Point Rainfalls

Comparison of: World Record Rainfalls, PMP, 100 yr, and Misc. Extreme Rainfall Events

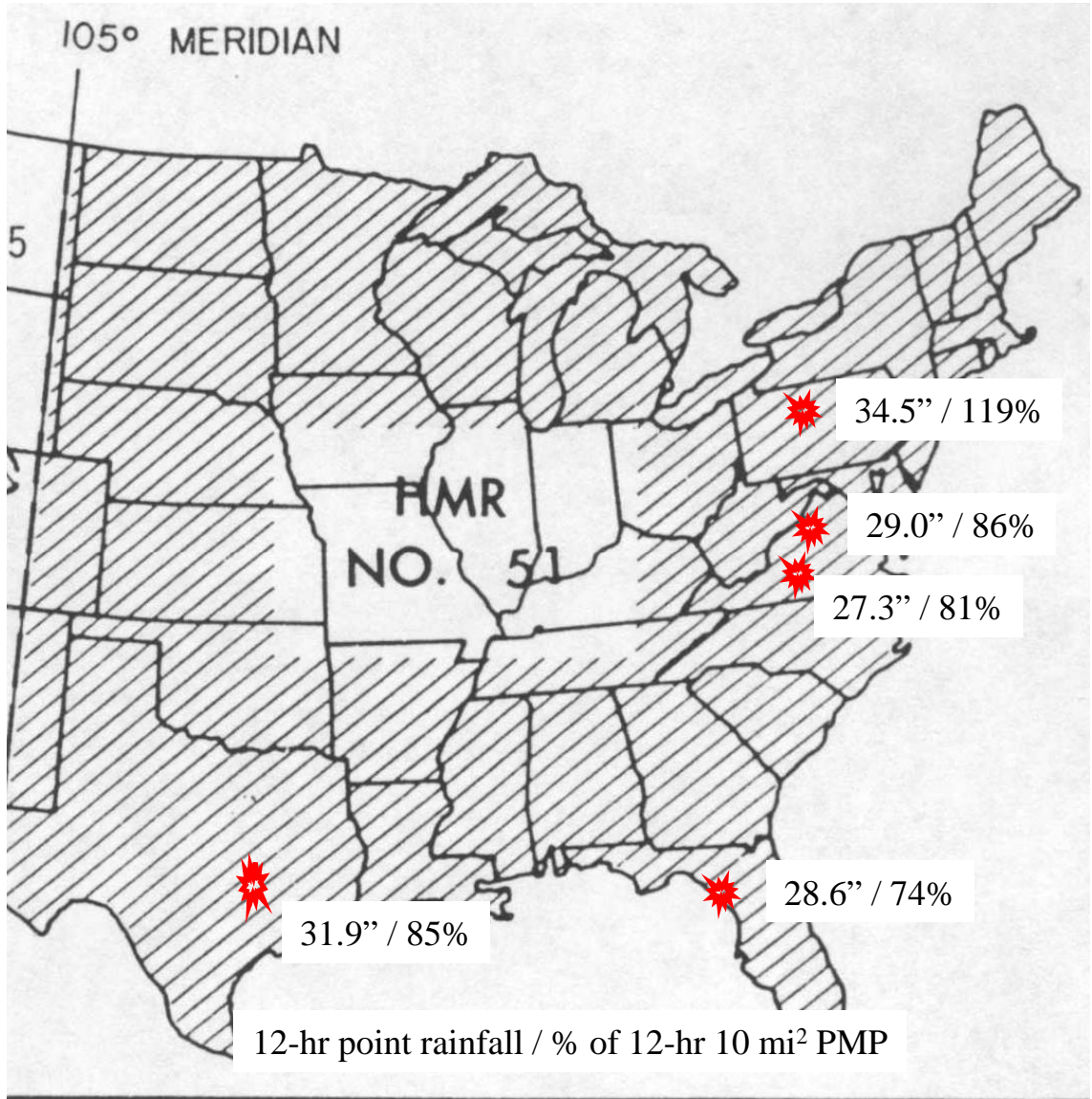


3 of the top 5 most intense 12-hour storms in the U.S. occurred in the Mid-Atlantic region

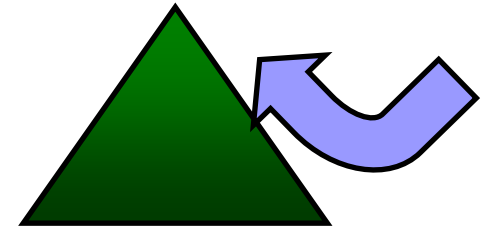
Smethport, PA - 1942

Nelson County, VA - 1969

Madison County, VA - 1995



- Topographic relief
 - Lifting of moisture-laden air



- Latitude
 - Fronts often stall in the Mid-Atlantic area

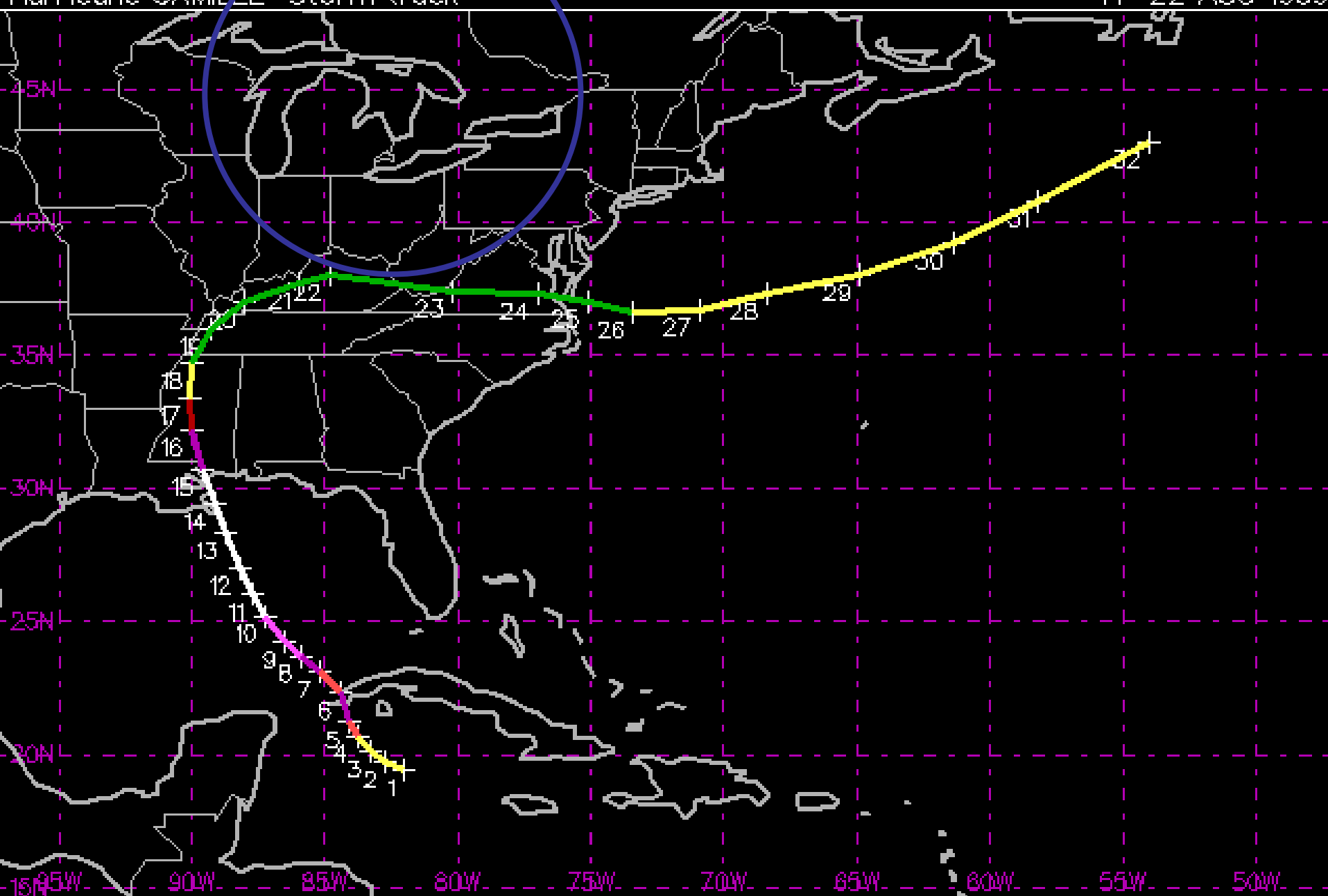


Nelson County, VA
Aug 19-20, 1969
Hurricane Camille

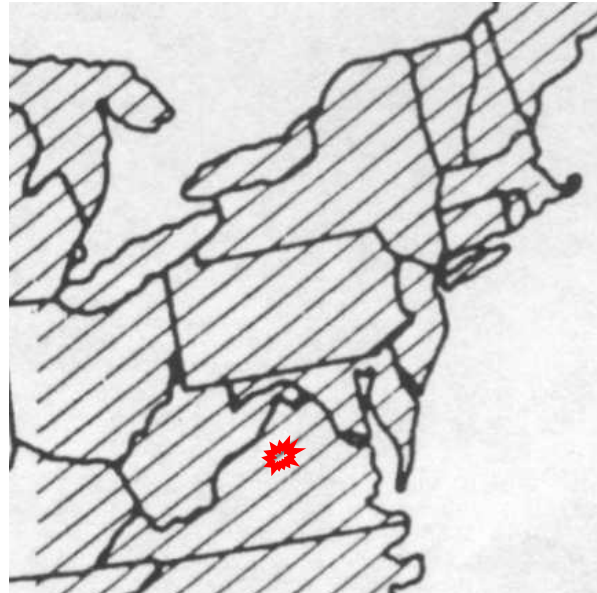


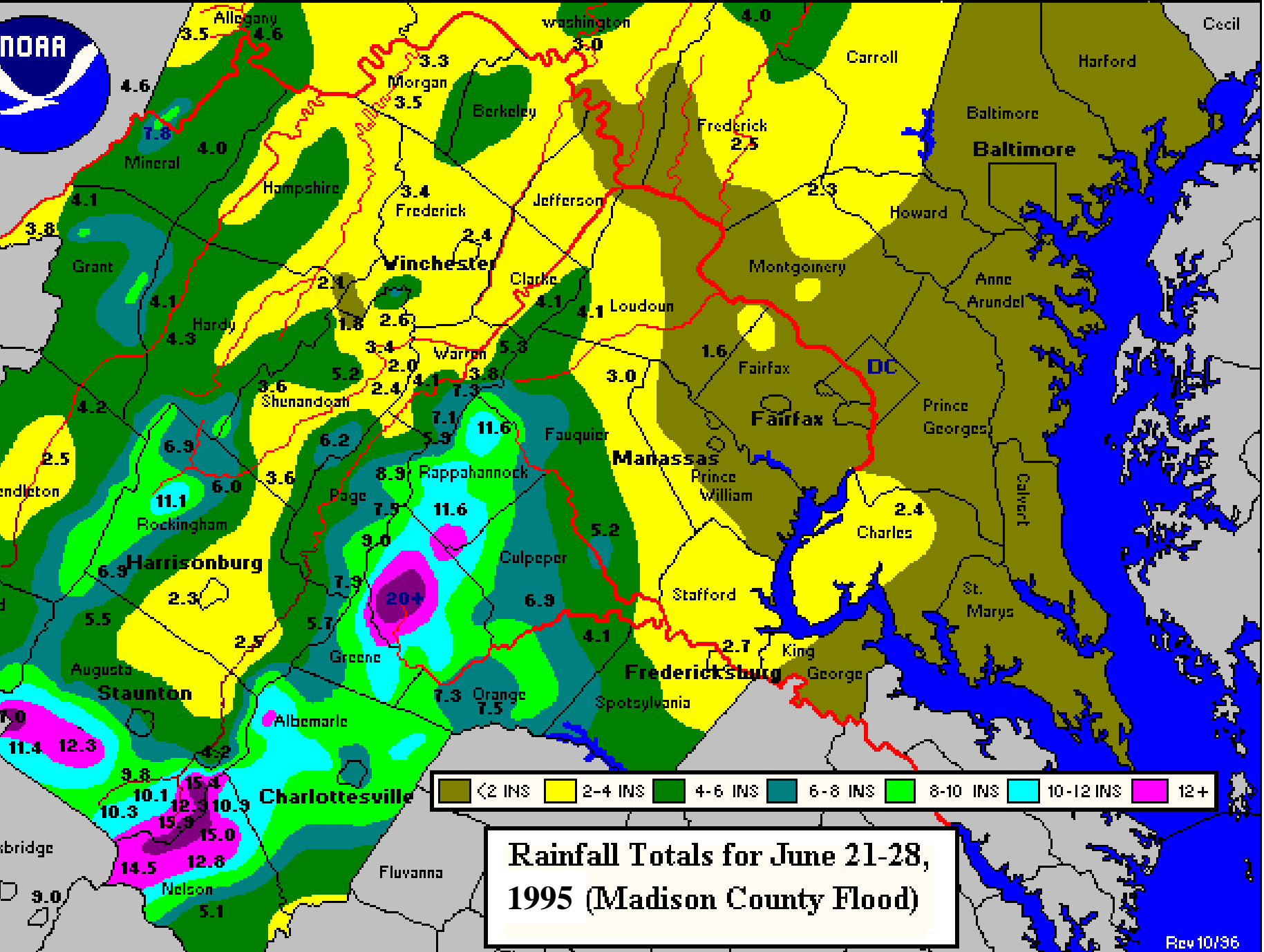
Hurricane CAMILLE—Storm track

14-22 AUG 1969

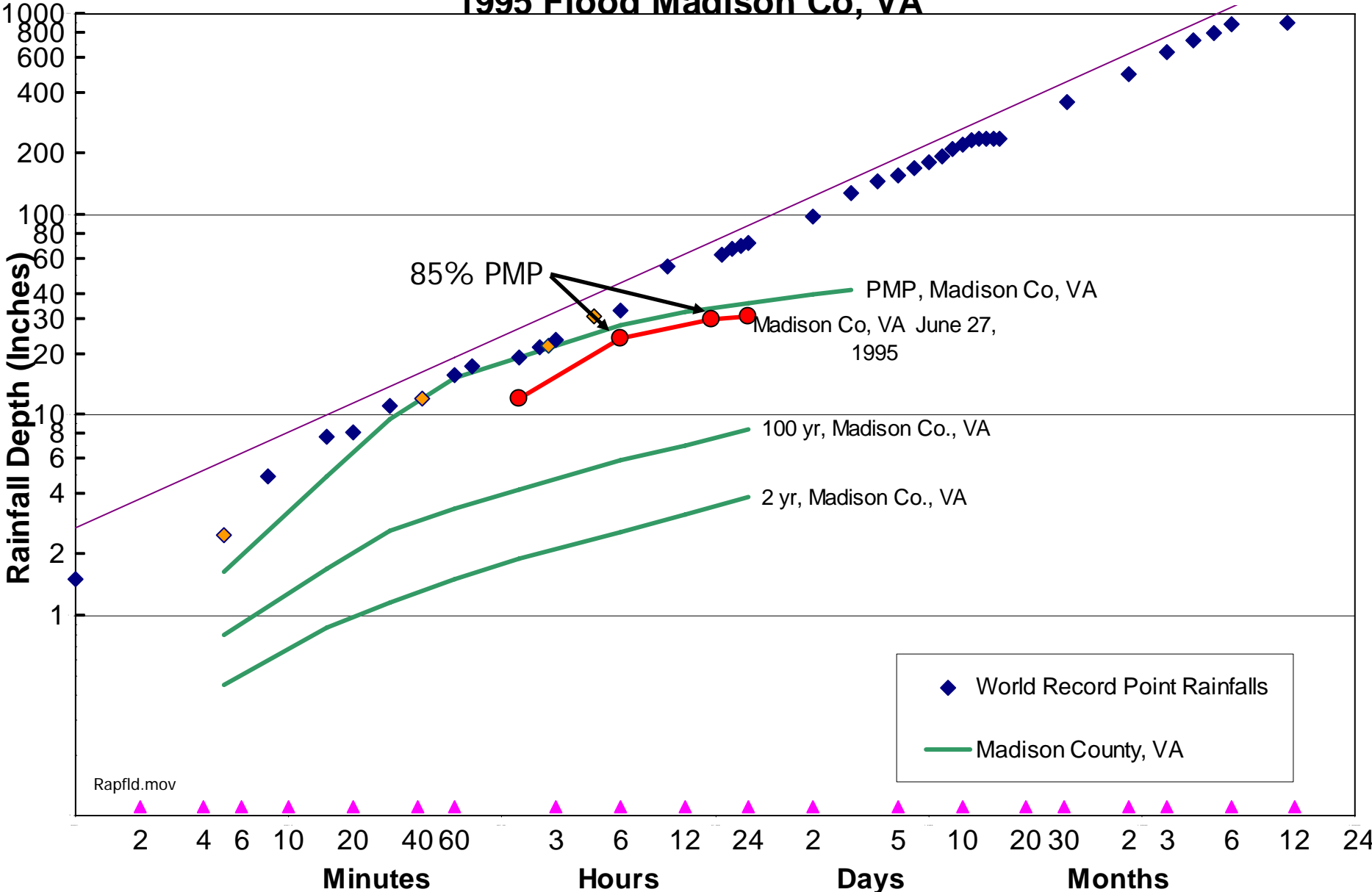


June 27, 1995
Madison County, VA





Comparison of: World Record Rainfalls, PMP, 2yr, 100 yr, and 1995 Flood Madison Co, VA



Conclusions

- Several point rainfall events in eastern US have exceeded the PMP estimates as defined by HMR 51 (10 mi² values)
- Many events greater than 50% PMP have occurred
- Latitude (summer jet-stream) appears to play a significant role in extreme rainfalls
- Virginia is a hotspot for intense rain events
- For small areas, thunderstorm phenomena would be the most likely cause of a PMF
- For large areas, hurricanes or other tropical storms are the most likely source of a PMF

Note: Looping of storms can significantly increase total rainfall depths