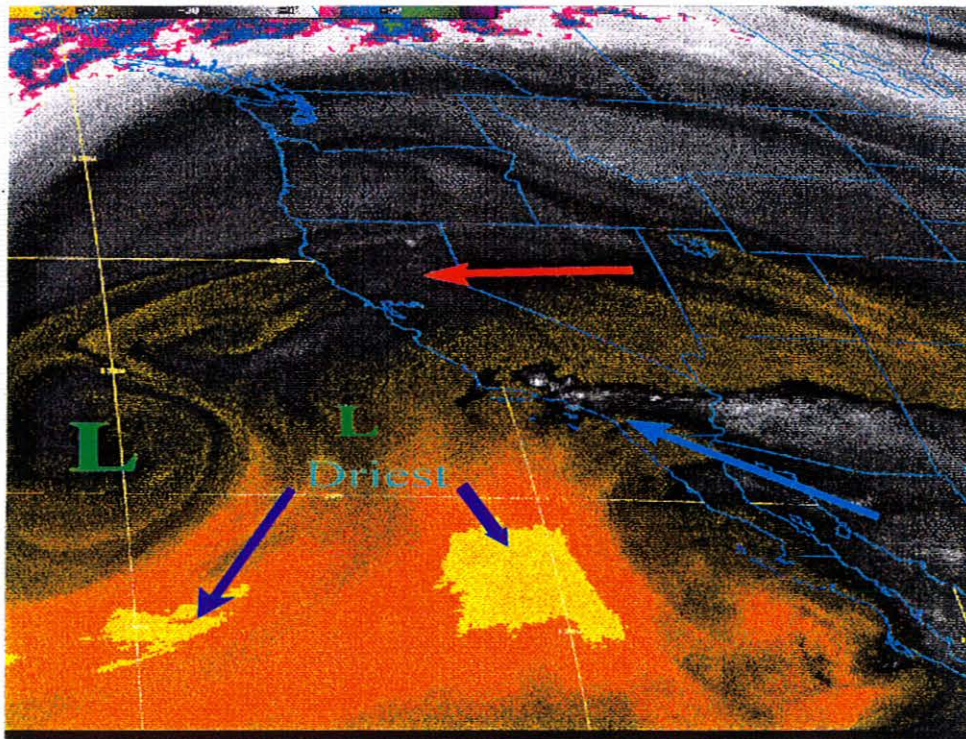
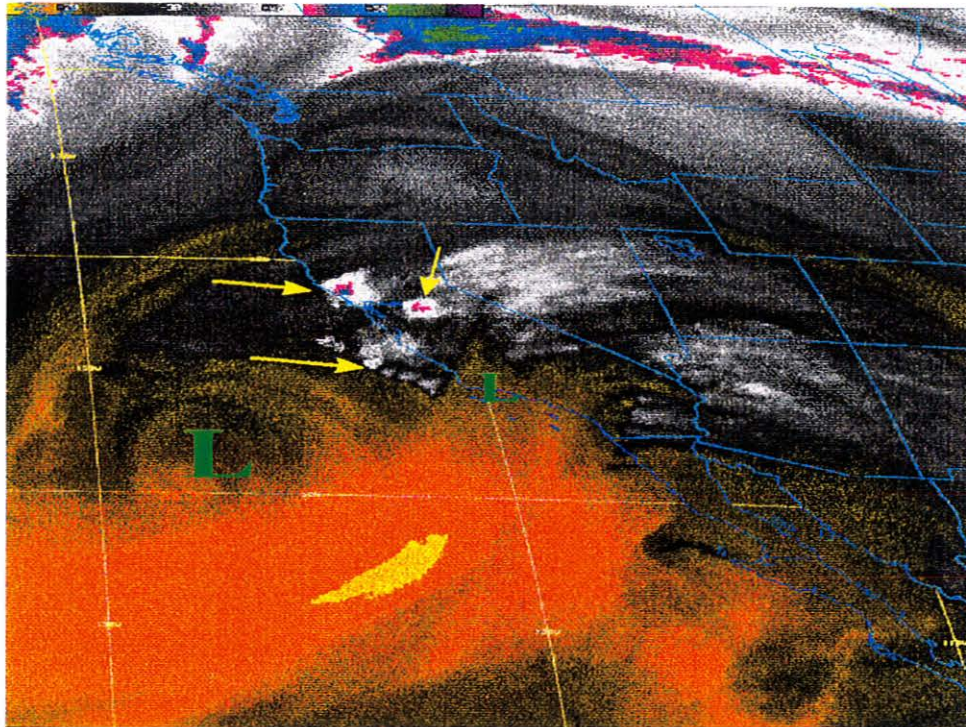


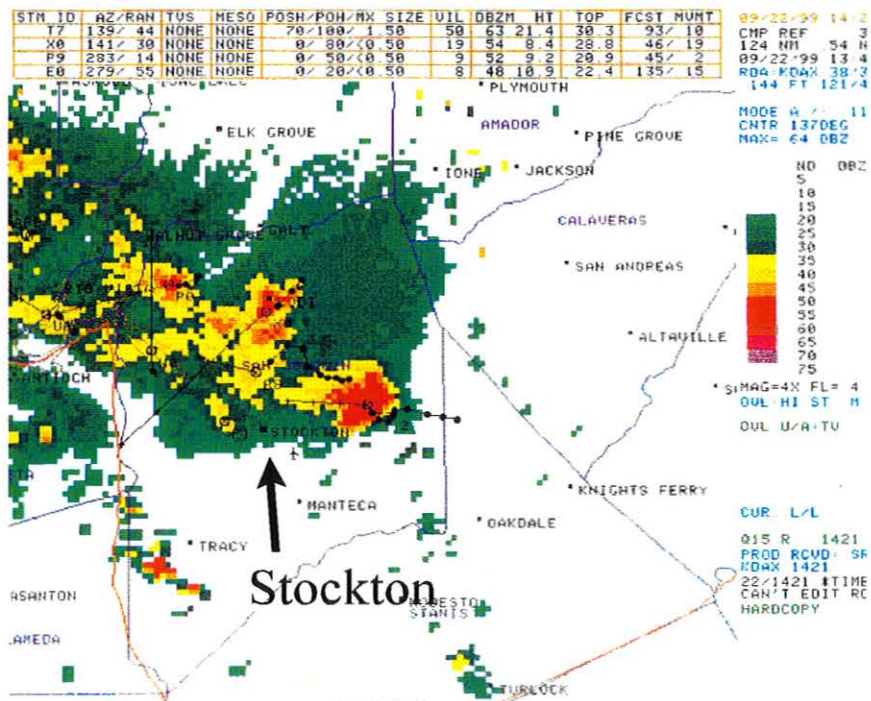
**Figure 1.** NLDN display of lightning strikes for a 24-h period ending 1200 UTC 22 September 1999. Map courtesy of the California Bureau of Land Management. The San Joaquin Valley is labeled for reference.



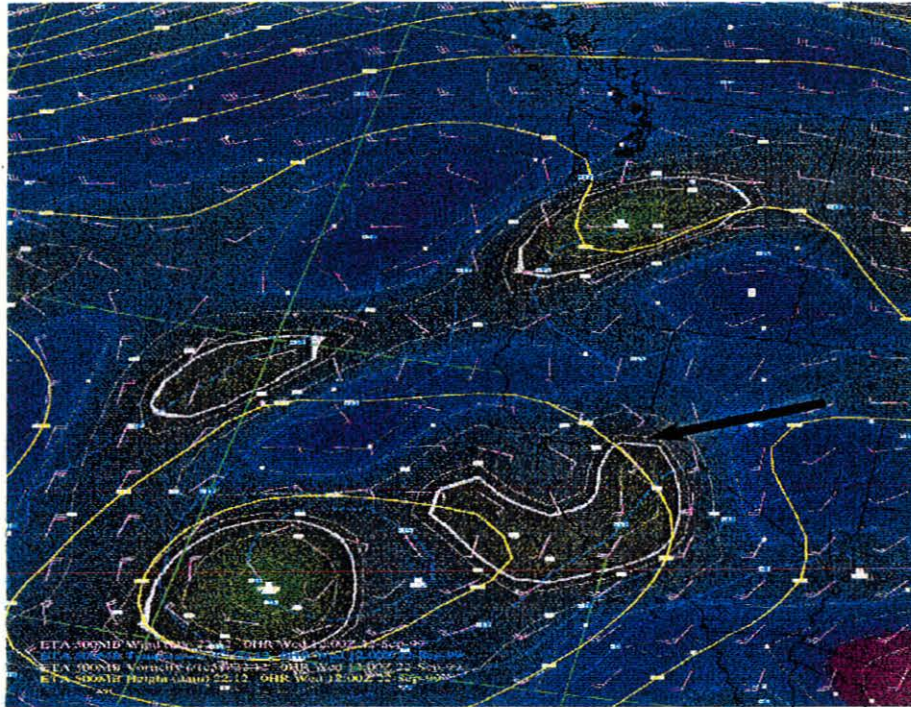
**Figure 2.** GOES-10 water vapor image at 2100 UTC 21 September 1999. Notice the circulation approaching California which was helping to draw subtropical moisture into the northern (red arrow) and southern (light blue arrow) portions of California.



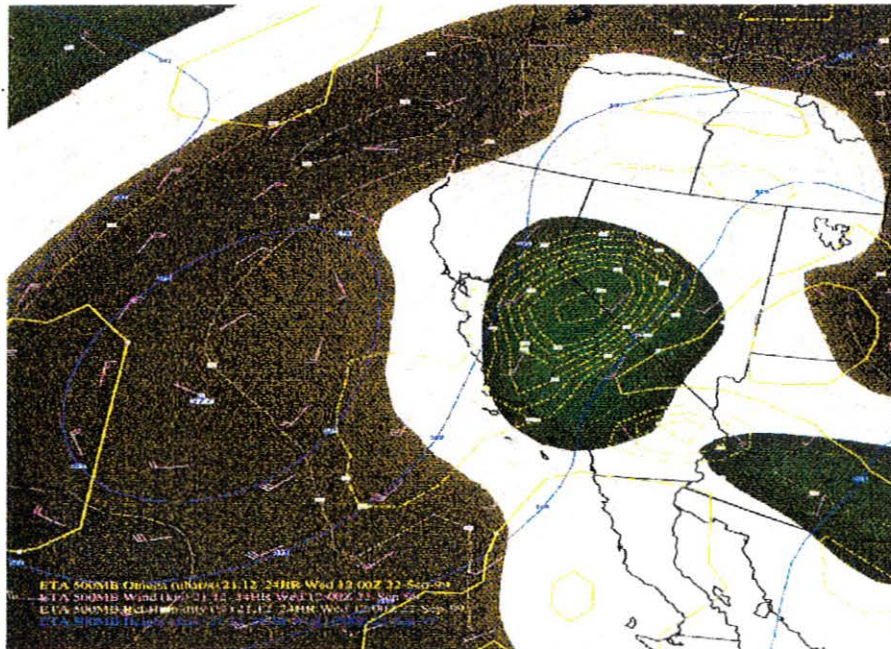
**Figure 3.** Water vapor image at 1100 UTC 22 September 1999. Explosive thunderstorm development was occurring on the east side of the main upper circulation while it interacted with subtropical moisture.



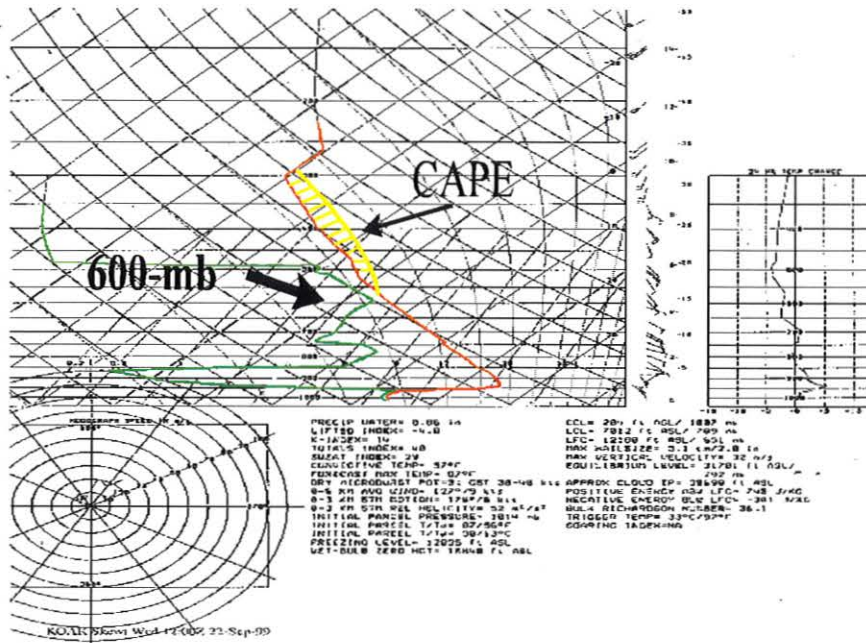
**Figure 4.** KDAK WSR-88D composite radar image at 1346 UTC on 22 September 1999. The highest reflectivity (60 dBZ) is detected just east of Stockton. The VIL value for this cell was  $50 \text{ kgm}^{-2}$ .



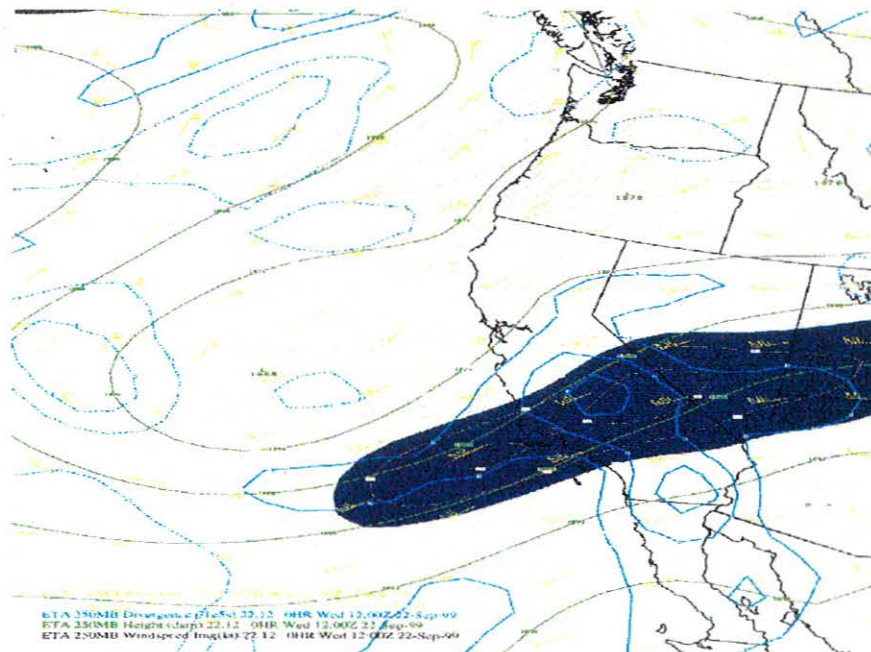
**Figure 5.** Eta 500-mb geopotential height analysis at 1200 UTC 22 September 1999. Notice the short wave well ahead of the main upper-level low. Yellow height lines are contoured every 30 m and vorticity units are every  $1e5s^{-1}$ . Half wind barbs are every  $5 ms^{-1}$ .



**Figure 6.** Eta 24-h 500-mb forecast valid at 1200 UTC 22 September 1999 from the 1200 UTC 21 September run. Green shaded area is relative humidity greater than 70 percent. Dashed yellow lines are omega contoured every  $1 ubars^{-1}$ . Half wind barbs are every  $5 ms^{-1}$ .



**Figure 7.** KOAK sounding at 1200 UTC 22 September. Notice the moist layer between 600 and 500 mb. An unstable lapse rate (nearly dry adiabatic) is noted above the marine layer top which was near 960 mb. Winds above 900 mb were from the southeast. Note the area of elevated CAPE (745 Jkg<sup>-1</sup>). Precipitable water was 0.86 in.



**Figure 8.** Eta 1200 UTC 250-mb analysis on 22 September 1999. Blue shaded area is greater than 30 ms<sup>-1</sup>. Solid blue lines are divergence contoured every 1e5s<sup>-1</sup> with a maximum over the San Joaquin Valley.