This work will present simultaneous observations of neutral calcium and its ions from Arecibo using 'twin' resonance lidar systems. The instrument is based on Nd:YAG laser that pumps a dye laser followed by sum-frequency mixing of the dye fundamental with the IR residual from the YAG to generate UV at 423 and 393 nm, which are resonance wavelength of Ca neutral and its ion respectively. These observations obtained in December 2009 show that there is no substantial ion or electron layer below 90 km, which suggests that the concentration of Ca ions is directly related to strength of the sporadic E. On all these nights reported here, both the ion and electron data show descending layers; above 100 km their rate of descent is 0.5 m/sec, while below 100 km it is around 1.1 m/sec, twice faster than those at the higher altitudes. The neutral Ca distribution is different from ions and an increase in neutral density from 5 atoms per cc to values exceeding 70 atoms per cc is observed as the ion layer descend to lower altitudes. This implies fast neutralization of the ions to the neutrals resulting in sudden Ca enhancements. The average abundance for neutral Ca is $9 \times 10^6$ atoms/cc on the nights when sporadic E is strong, while it increases to $1.8 \times 10^7$ atoms/cc on the night when the sporadic E is about three times weaker than the other nights. This study highlights the significance of simultaneous observations in understanding ion-neutral coupling processes.