Figure S1. Kernel density functions for randomly selected pixels covering land (left) and ocean (right) surface. Both functions showed skewed symmetric distributions. The initial part of both curves was bell-shaped, which we inferred as the variability in surface reflectance owing to changes in solar angle and optical thickness of the atmosphere. We inferred the latter part of both representing a range in cloudiness. A Gaussian kernel type was used for this analysis, and optimum bandwidths were obtained using Silverman's rule of thumb (Silverman, 1986).

Figure S2: ECDFs of albedo of one pixel covering land and one covering the ocean surface are shown. Subscripts ‘l’ and ‘o’ refer to land and ocean respectively. Distributions for different times of day (a) and different months (b) showed a range of values of slowly increasing albedos signifying clear sky conditions followed by a rapid increase implying a range of cloudy conditions (Iacobellis and Cayan, 2013). While there were diurnal and seasonal differences in the nature of the distributions, the range of lowest albedos was constrained and implying that variation in surface albedo due to time of day and year was low and did not impact the study. Note, that images 30 min after sunrise and 30 min before sunset were discarded.
Figure S3. (a) ECDFs for inversion heights at Vandenberg Air force base (VAFB), San Diego airport (NKX), and calculated for a point in the Santa Barbara Channel (Islands), (b) cloud base heights at Santa Barbara Airport (SBA)
Figure S4: Seasonal cycle of GOES cloud cover fraction (CCF) and Inversion Bas heights.