

Questions Raised by Our Analyses of Data in Lab Activities #1, 2, and 4

- [Lab #1] Why do temperatures over land outside the tropics vary so much over the course of the year compared to ocean temperatures?
- [Labs #2 and #4] Why do surface temperature maxima and minima lag behind the maxima and minima in solar insolation (by a month or so over land; we didn't check over oceans per se), both in globally averaged data and in continent-scale averages (at midlatitudes)?
- [Lab #4] Given the large imbalances between annual average absorbed solar radiation and emitted LWIR radiation at low and high latitudes, why don't temperatures there change dramatically from one year to the next?
- [Lab #4] Why do zonally averaged, space-bound radiation fluxes have a local minimum near the equator, where it tends to be warmer than anywhere else? And something similar appeared in the zonally averaged absorbed solar radiation data!
- [Lab #4] Why is the surface radiative emission flux (leaving the earth's surface) so much greater than the space-bound emission flux (leaving the planet)? Where does all that energy go? (Correspondingly, why is the surface so much warmer than the planet as a whole, as "seen" from space?)