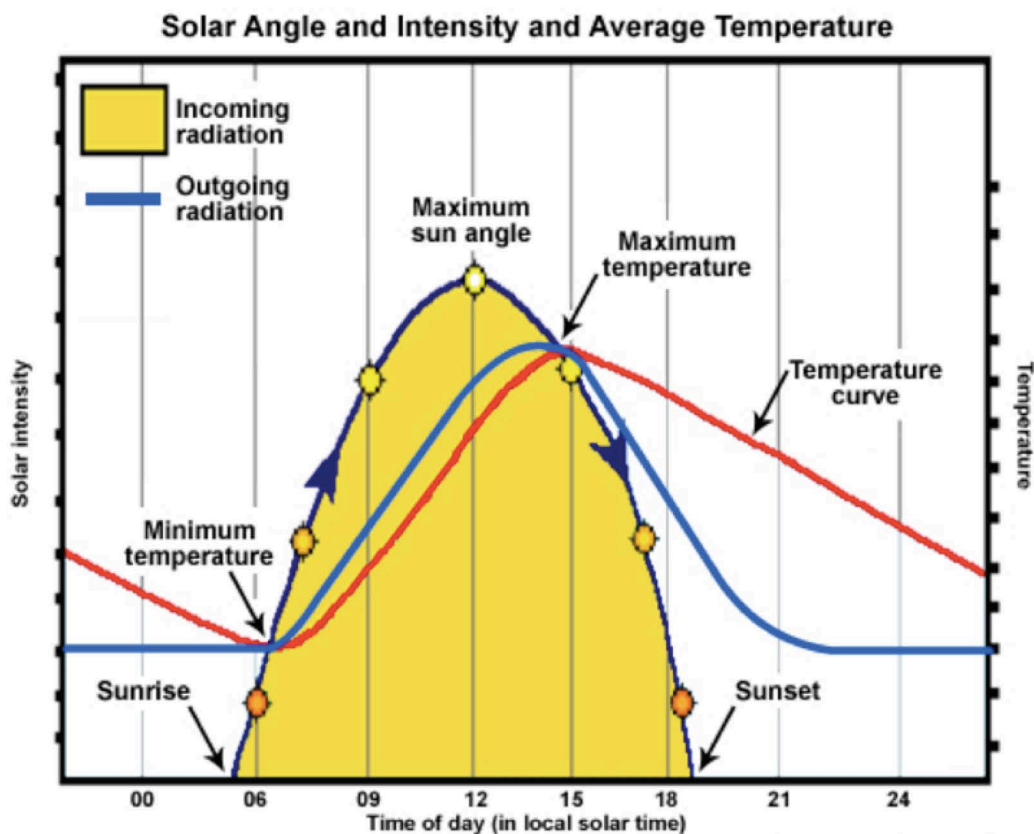


- 3) I used to show in lecture sections the schematic to explain the diurnal cycle of temperature in terms of radiative balance. Unfortunately, the diagram has a conceptual error (that I intentionally omitted during the narrative for pedagogic reasons) where two of the curves are not consistent with the laws of radiation. Which two curves are in error? Use the laws of radiation to explain what the inconsistency is between the two curves and what changes need to be made to correct the diagram. (Note: The COMET Program has since corrected the figure.)

(Hint: Radiation Laws of Box 4.1 and subsection 4.5.3 of H&P.)



Black curve-incoming solar radiation
Blue curve-outgoing IR radiation
Red curve-temperature