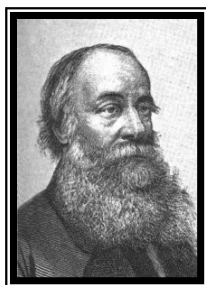
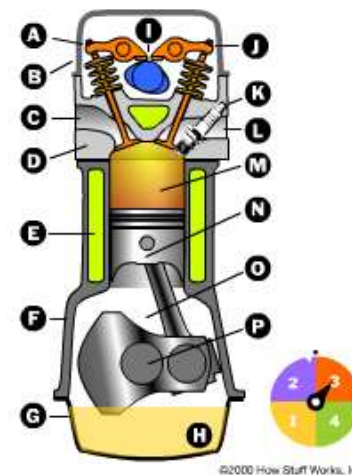


Chapter 6: Thermochemistry



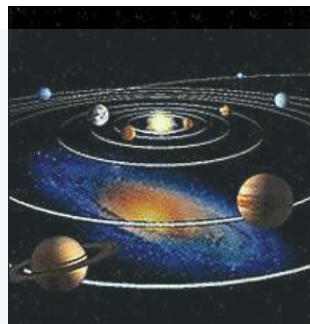
James Prescott Joule



Heat Transfer: From Hot to Cold



Universe



Solar System

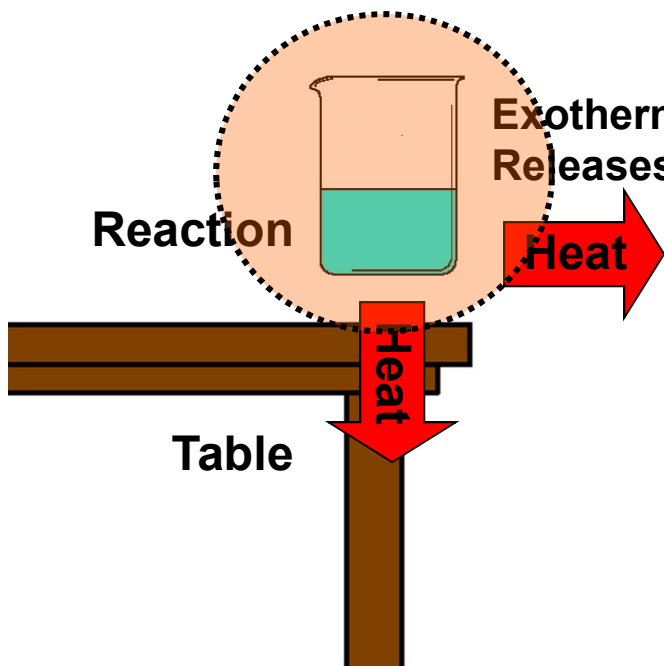


Earth



Surroundings

SYSTEM



MCTC



Minneapolis



Changes in Energy: Keeping Track

Change in Energy

$$\Delta E = E_{\text{final}} - E_{\text{initial}} = E_f - E_i$$

ΔE

$E_{\text{final}} > E_{\text{initial}}$

**System gains
heat energy.
Endothermic**

$\Delta E = E_{\text{final}} - E_{\text{initial}} > 0$

ΔE is positive.

ΔE

$E_{\text{final}} < E_{\text{initial}}$

**System loses
heat energy.
Exothermic**

$\Delta E = E_{\text{final}} - E_{\text{initial}} < 0$

ΔE is negative

