Simple Light Sources

Types

Directional

- All light rays have the same direction
- Simulates parallel rays of sun

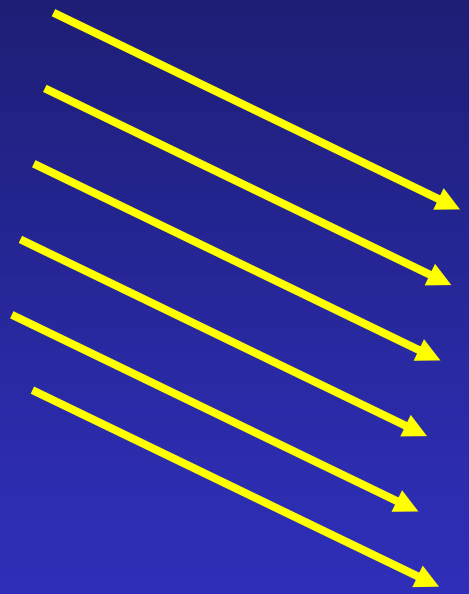
Point Light Source

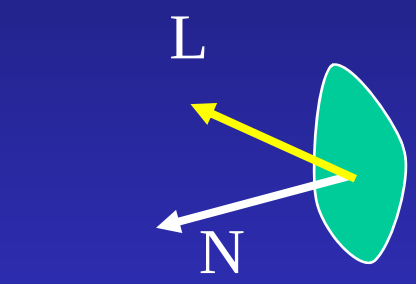
- Light originates from specific point in world space
- Light ray has to be formed from object point to light source point

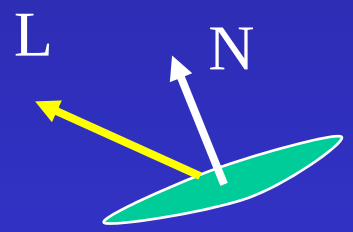
Spotlight

- Point light source with direction of greatest intensity
- Optionally has hood outside of which no light is emitted

Directional



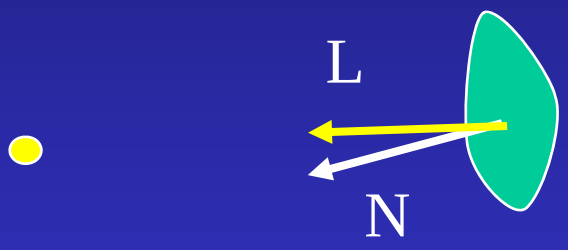


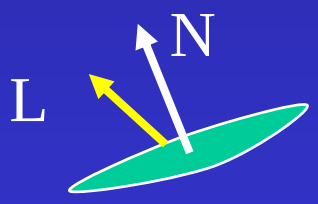


$$N_i \cdot L$$

Where L is constant for all objects in scene

Point Light Source



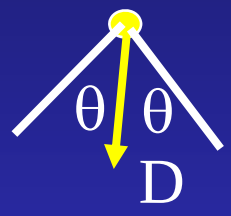


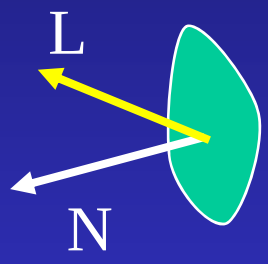
$$N_i \cdot L_i$$

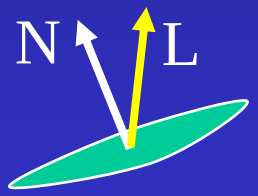
L is formed for each illuminated point or face or object

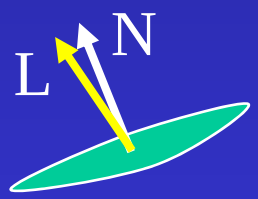
Spotlight (Warn model)

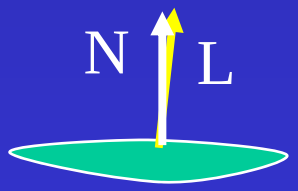
Intensity of light falls off according to deviation from D











$$I_i = -D \cdot L_i$$

Clamp to zero

Diffuse: $I_i(N_i \cdot L_i)$

<u>Hood (optional)</u>

If $\cos(\theta) > -L_i.D$

Ignore light