

Lecture Notes 9/25

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3 major figures in the development of light

• Newtons

• Corpuscular theory of light (light bodies)

• Light consisted of particles

• Huygens (Newton's contemporary)

• Wave theory (all lights is waves)

• explain interference = constructive

↙ destructive = nothing
responsible for making spectrum

• Maxwell

• wrote equations

• demonstrated that light was actually a high frequency electromagnetic wave.

• Einstein

Light → particles (photon) and waves.

• Black bodies = (asmit)

• absorbs electromagnetic waves - radiation that falls on it.

• 100% efficient of absorbing radiation it falls on.

• perfect black bodies are rare

• what happens is energy → hot → releases heat → infrared → visible → ultraviolet

(Earth's atmosphere observes Kirk off laws)

• Everyday World.

• wear ~~lighter~~ lighter colors in summer time / darker colors in winter time

• dark clothing = act more like black-bodies

• black bodies = absorb anything that lands on them

Coordinate Systems:

- Celestial Coordinates system = coordinate system for the sky

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Coordinates on the Celestial Sphere

- Right Ascension (longitude)

- Declination (latitude)

Celestial Equator

Celestial North Pole

• Polaris

Celestial South Pole

Zenith = straight above you

Nadir = directly below you

Meridian (use Zenith and Polaris) divides night sky East/West halves

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longitude = parallels
latitude = meridian

meridian \rightarrow Great Arcs

prime meridian = 0° meridian

where - Greenwich, England \rightarrow they invented it

here in
Pocatello = longitude = 112° West of prime meridian (out of 360°)
latitude = 43°