- Light wavelength = wave speed divided by frequency, or
- Photons carry energy $E=hf$, where h is Planck's constant
- Doppler shift: $\Delta\lambda / \lambda = v / c$
- Hubble Law: recessional velocity = H_0 × distance $\mathrm{v} = H_o d$
- Age of Universe:

$$t_0 = \frac{1}{H_0} = \frac{10^{12}\,\mathrm{yr}}{H_0 \text{ in km/s/Mpc}}$$

- $E=mc^2$
- Wien's Law: $\lambda_{max} = \dfrac{0.003}{T}$ metres

- Stefan-Boltzmann Law: flux proportional to T^4, total luminosity of a star proportional to $R^2\,T^4$
- Density parameter Ω = density / critical density
- Schwarzschild radius $R_{schwarz} = 3\,M$ where M is in solar masses, R in km
- Supermassive black hole mass = galaxy mass / 1000