



Lecture 1 – Atomic Structure

## Lecture 2 – The Ultraviolet Catastrophe

Lecture 3 – Particle Nature of Light

Lecture 4 – Atomic Energy Levels and Spectra

Lecture 5 – X-ray Production and Diffraction

Lecture 6 – X-ray Spectra

Lecture 7 – Matter Waves

Lecture 8 – Wave-Particle Duality

Lecture 9 – Wave functions for Quantum Particles

Lecture 10 – A Quantum Mechanical Wave Equation

Lecture 11 – Applications of Schrödinger's Equation



## Recap of Lecture 1

- Discovery of electron – Plum Pudding Model
- Scattering of He nuclei disproved this, showed nucleus is **tiny**
- Solar system model.. but accelerating charges **radiate**..
- Postulates of the **Bohr model** – energy levels are quantised and we can only hop between them (but no idea WHY)

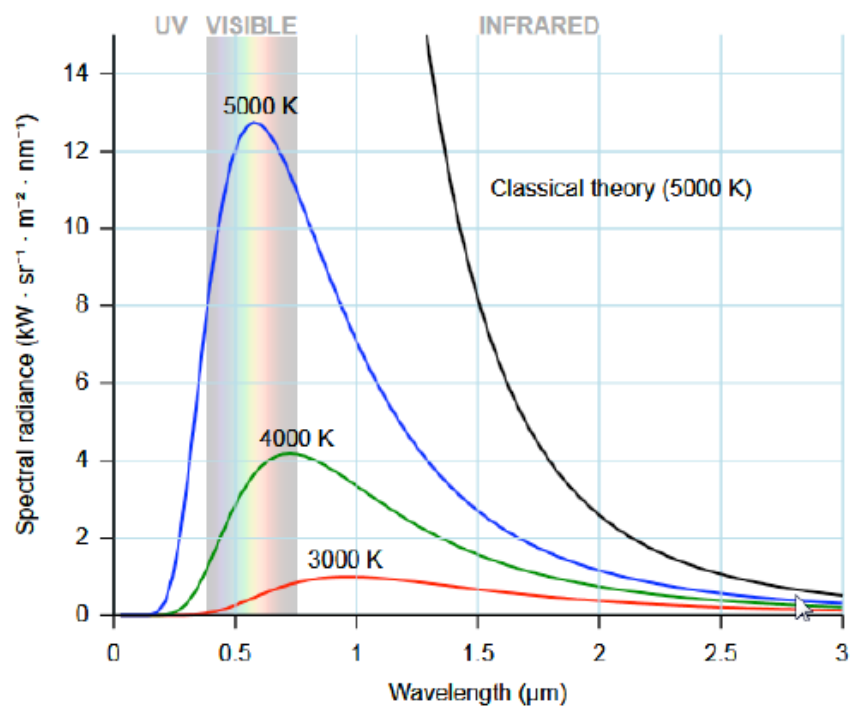
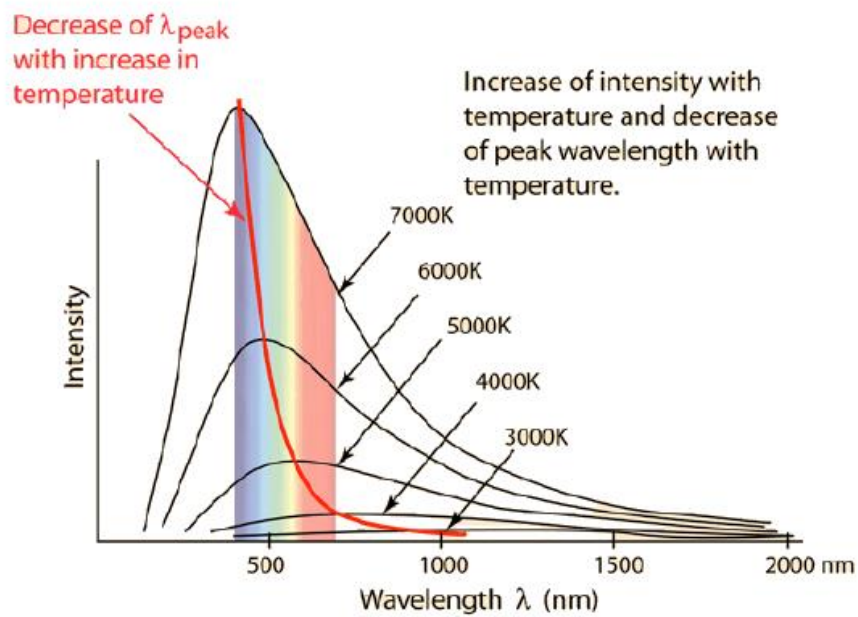
## In this lecture

- Failure of classical theories to explain blackbody radiation (light shining out of hot things). “The Ultraviolet Catastrophe”
- How quantising light into photons gives predictions that fit observation..

## Welcome to the Ultraviolet Catastrophe



## Blackbody radiation spectra



## Science (Quantum Mechanics) Works

### SCIENCE

[<](#) [< PREV](#) [RANDOM](#) [NEXT >](#) [>](#)

