# Astronomy and cosmology

A-Level Physics · Vocabulary in context

| Word | Example |
|---|---|
| **luminosity** /ˌluːmɪˈnɒsɪti/ | The **luminosity** of a star is its total power. |
| **power** /ˈpaʊə/ | A 60 W lamp has a **power** of 60 watts.<br>60 W 60 |
| **energy** /ˈenədʒi/ | Food gives your body the **energy** it needs to move. |
| **radiant flux intensity** /ˈreɪdɪənt flʌks ɪnˈtensɪti/ | The **radiant flux intensity** falls with distance from the star. |
| **inverse-square law** /ɪnˈvɜːs skweə lɔː/ | The **inverse-square law** says double the distance gives a quarter of the intensity. |
| **standard candle** /ˈstændəd ˈkændl/ | A **standard candle** is a star of known brightness. |
| **Cepheid variables** /ˈsefiɪd ˈveərɪəblz/ | **Cepheid variables** help us measure distances to galaxies. |
| **Type Ia supernovae** /taɪp wʌn ˈeɪ ˌsuːpəˈnəʊviː/ | **Type Ia supernovae** all have about the same peak brightness. |
| **parallax** /ˈpærəlæks/ | Look straight at the scale to avoid **parallax** errors. |
| **light years** /laɪt jɪəz/ | The star is 4 **light years** away.<br>4 |
| **blackbody** /ˈblækbɒdi/ | A **blackbody** absorbs all the light that hits it. |
| **wavelength** /ˈweɪvleŋθ/ | The **wavelength** is the distance from one crest to the next. |
| **temperature** /ˈtemprɪtʃə/ | The thermometer shows the water's **temperature**. |



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| **Wien's displacement law** /viːnz dɪˈspleɪsmənt lɔː/ | **Wien's displacement law** says hotter stars look bluer. |
| **Stefan–Boltzmann constant** /ˈstefən ˈbɒltsmən ˈkɒnstənt/ | $\sigma$ is the **Stefan–Boltzmann constant**.<br>$\sigma$ |
| **Stefan–Boltzmann law** /ˈstefən ˈbɒltsmən lɔː/ | The **Stefan–Boltzmann law** gives the power of a star. |
| **spectral lines** /ˈspektrəl laɪnz/ | **Spectral lines** show which elements are in the star. |
| **redshift** /ˈredʃɪft/ | The **redshift** shows the galaxy is moving away. |
| **recession** /rɪˈseʃn/ | The galaxy's speed of **recession** is 2000 km/s.<br>2000 km/s |
| **blueshifted** /ˈbluːʃɪftɪd/ | Light from a galaxy coming towards us is **blueshifted**. |
| **Doppler effect** /ˈdɒplə ɪˈfekt/ | The **Doppler effect** makes a passing car's sound change pitch. |
| **Hubble's law** /ˈhʌblz lɔː/ | **Hubble's law** says far galaxies move away faster. |
| **Hubble constant** /ˈhʌbl ˈkɒnstənt/ | The **Hubble constant** links a galaxy's speed to its distance. |
| **Big Bang** /bɪg bæŋ/ | The universe began with the **Big Bang**. |
| **cosmic microwave background** /ˈkɒzmɪk ˈmaɪkrəʊweɪv ˈbækgraʊnd/ | The **cosmic microwave background** is left over from the Big Bang. |
| **supernovae** /ˌsuːpəˈnəʊviː/ | **Supernovae** are huge star explosions. |