

12.4: Stellar Mass

The type and life of the new star depends on the initial amount of material present: its stellar birth weight. Astronomers group stars as **Low-mass**, $<1.33 m_{\odot}$; **Intermediate-mass**, $1.33 m_{\odot}$ to $4 m_{\odot}$; and **High-mass** $>4 m_{\odot}$. (Recall m_{\odot} refers to the mass of the Sun, the Sun = $1 m_{\odot}$) Each of these star groups has different lives and deaths. In this module, we will examine low- and high-mass stars.

Stellar Mass versus Star Life range, Spectral Class

Mass; m_{\odot}

60 m_{\odot}

30 m_{\odot}

10 m_{\odot}

3 m_{\odot}

1.5 m_{\odot}

1 m_{\odot}

0.1 m_{\odot}

Time; Year

3 million years

11 million years

32 million years

370 million years

3 billion years

10 billion years

1000's of billion years

Spectral Type

O3

O7

B4

A5

F5

G2 (Sun)

M7

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