

## **Main Sequence**



Core:  $\text{H} \rightarrow \text{He}$

Envelope: H

duration: until core  
grows to  $\frac{1}{6}$  of star

## **Red Giant**



Core: He degenerate

Shell:  $\text{H} \rightarrow \text{He}$

Envelope: H (expands)

duration: until H  
depleted in  $\frac{1}{2}$  of star

## **Horizontal Branch**



Core:  $\text{He} \rightarrow \text{C}$

Shell:  $\text{H} \rightarrow \text{He}$

Envelope: H

duration: until H  
depleted in  $\frac{1}{2}$  of star

## **Asymptotic Giant (AGB)**



Core: C/O degenerate

Shells:  $\text{He} \rightarrow \text{H}$ ,  $\text{H} \rightarrow \text{He}$

Envelope: H (expands)

duration: until H  
depleted in  $\frac{1}{2}$  of star

## **White Dwarf + Planetary nebula**



Core: C/O degenerate

Envelope: H (expands)

duration: until H  
depleted in  $\frac{1}{2}$  of star