

| <u>Fuel</u> | <u>Temp (K)</u> | <u>Reaction</u> | <u>25M</u> |
|-------------------------------|----------------------|---|---------------------|
| 1) <u>Hydrogen</u> | 15,000,000 | $4H \rightarrow He$ <u>Energy</u> | <u>7,000,000</u> |
| 2) <u>Helium</u> | <u>100 million</u> | $3He \rightarrow \underline{12C} + \gamma$ $\underline{12C} + \underline{4He} \rightarrow \underline{16O}$ | <u>500,000</u> |
| 3) <u>Carbon</u> | 600 million | $\underline{12C} \rightarrow \underline{21Ne} + \underline{24Mg}$ | <u>600 yrs</u> |
| 4) <u>Neon</u> | 1 billion | $\underline{21Ne} \rightarrow \underline{16O}$ | <u>1 yr</u> |
| 5) <u>^{16}O</u> | 1.5 billion | $\underline{16O} \rightarrow \underline{28Si}$ $\underline{28Si} \rightarrow \underline{31P}$ $\underline{31P} \rightarrow \underline{32S}$ $\underline{32S} \rightarrow \underline{36Ar}$ | <u>6 months</u> |
| 6) <u>Silicon</u> | 3 billion | $\underline{28Si} \rightarrow \underline{56Fe}$ | <u>1 day</u> |
| 7) <u>Core Collapse</u> | <u>5 billion K</u> | | <u>4 seconds</u> |
| 8) <u>Core Bounce</u> | <u>230 billion K</u> | | <u>Milliseconds</u> |
| 9) <u>Super Nova</u> | | | |

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