**Stellar Evolution Chart**

(all start as a Protostar – Information is from the Chandra X-Ray Telescope site)

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| Blue Supergiant M>≈150M  (Eta Carinae)  Brief | Pair Instability - Thermal energy is turned into electron positron pairs. Ka Boom | No compact remnant |  |  |
| Blue Supergiant M<≈150M  (HD 5980)  ≈1MY  Luminous blue variable - Chaotic variable and unstable star. | Supernova or Hypernova? | Black Hole |  |  |
| Blue Supergiant M≈50M  (Arches and Quintuplet clusters)  ≈10MY  Super bright blue star | Type II Supernova, or Hypernova (GRB) | Black Hole |  |  |
| Blue Supergiant M≈30M  ≈100MY  Super bright blue star | Red Giant – He core collapses spurring intense H fusion | Blue Giant  (Wolf Rayet star – ejects its outer layers, so we see the core) | Type II Supernova – implodes, electrons turn protons into neutrons | Neutron star – (Pulsar?)  12 miles in dia, a teaspoon would weigh more than a billion tons |
| Sun Like Star M = M  ≈10BY | Red Giant - yeah | Planetary Nebula – Hot white dwarf’s solar wind strikes previously ejected material | White dwarf – hot small star – doing Carbon fusion | (Type Ia Supernova?) – White dwarf approaches the Chandrasekhar limit by gaining mass from stellar partner. |
| Red Dwarf M<.5M  ≈50BY | Red Dwarf – most common type of star in the galaxy. H fusion | Brown Dwarf – too small for any other nuclear reaction to occur |  |  |
| Brown Dwarf M<.08M | Cannot sustain nuclear fusion in its core – magnetic fields heat upper atmosphere |  |  |  |