

# The Polymorphic System HD 87646 and Its Associated Evolving Stars

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*Abstract: It is taught and accepted by the dogma that all stars are the same age if they are seen orbiting young stars. This is false. The system HD 87646 is polymorphic, meaning it has stars in various stages of evolution as is predicted by the general theory. Generalizations and future predictions are made concerning this system.*

The HD 87646 system has 4 stars. Two are relatively young, at about 100 million years for HD 87646A (the largest of the bunch), to about 140 million years for HD 87646B, the second largest. Both stars straddle the Sun in weight, as one is slightly larger, and the other is slightly smaller in both mass and diameter. The other two stars that were discovered by the researchers at University of Florida are MARVELS-7c, which is a brown dwarf about 57 Jupiter masses and in orbit around HD 87646A at 1.5 Au, and MARVELS-7b, which is about 12.4 Jupiter masses and in orbit around the same host, at .1 Au. A diagram is provided on the last page (not to scale).

The reasons why the system HD 87646 is polymorphic are listed below:

1. They are different ages. You cannot have stars all come from the same dust cloud if they are hundreds of millions of years in age differences! If they all came from the same dust cloud, then they would all be the same age!

- a. HD 87646A is about 100 million years old
- b. HD 87646B is about 140 million years old
- c. MARVELS-7c is about 350 million years old
- d. MARVELS-7b is between 450-500 million years old

2. Different orbital distances.

a. Just looking at the diagram on the last page, we can see they all have different orbital distances. If this system was not polymorphic (it is), then the evolving gas type stars would be similar to the orbit of Neptune. They are not, they are very close in to the bigger of the two hosts.

3. Different rates of mass loss.

a. Clearly the closest in object, MARVELS-7b, will be losing mass much faster than MARVELS-7c, as it is closer by a long shot to its host. Not only that, but its much less massive meaning its gravitational field cannot hold onto its hydrogen as strongly as the younger brown dwarf.

b. The two youngest stars in this system, the hosts, are losing mass much, much faster than the other two, far older stars, as they are even ejecting it away as solar wind!

4. Strength of radiances.

a. The youngest two stars are shining very strongly, much stronger than the brown dwarf and the grey dwarf.

5. Masses.

a. This is a no-brainer. Since the stars are all different masses, then they all have different histories. This is common in polymorphic systems for all the stars to have different masses. In fact, no two stars will have the exact same mass. This further supports the realization that we are looking at a multiple, polymorphic system.

There could be more to write to show why HD 87646 is a polymorphic system, but this will do for now. It is a good example to show how common it is for star systems to be different, not "bizarre" as claimed by the dogmatists in the mainstream media and censored publications such as Astrophysical Journal and other dogmatic, leaderless, misguided and misinformed institutions that have no critical thinking capacity.

