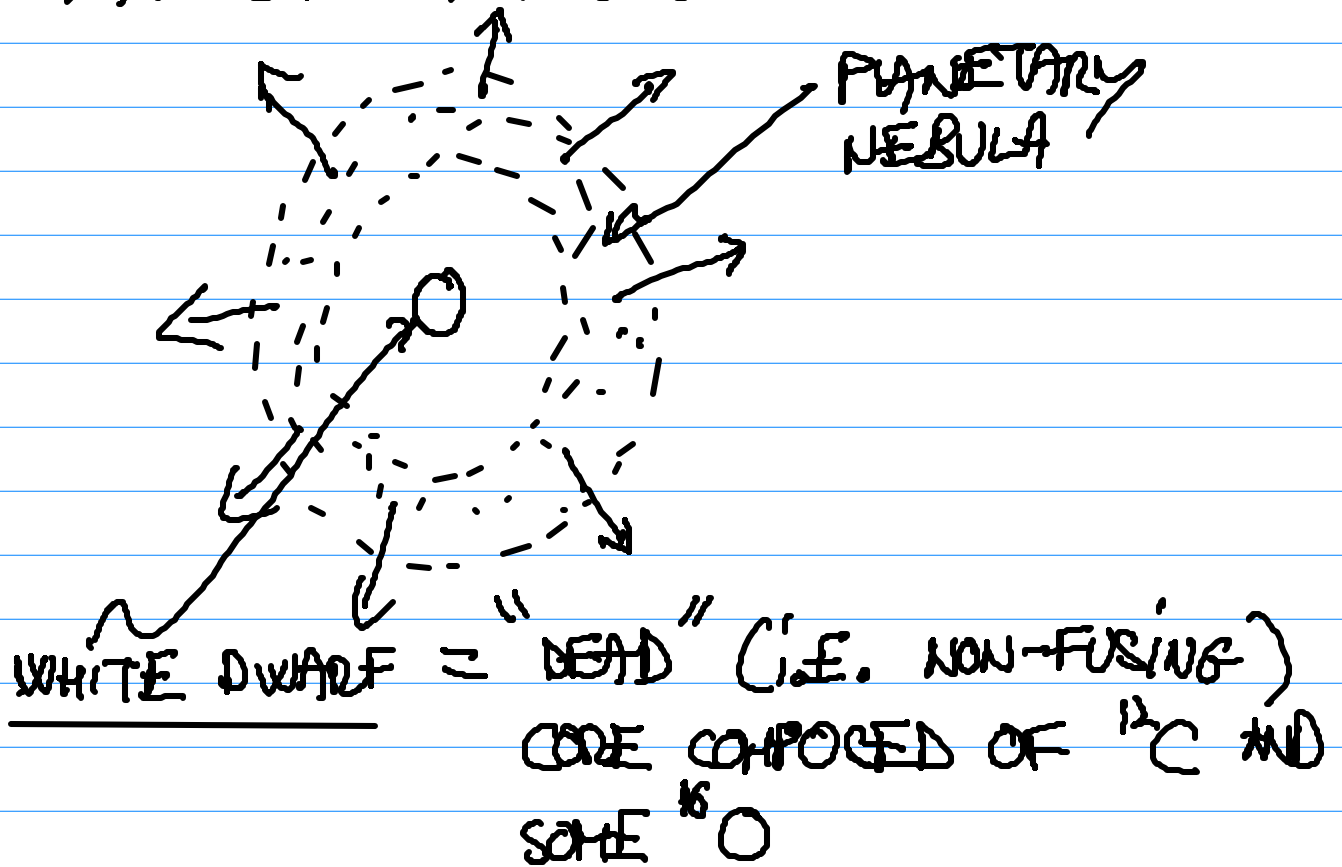


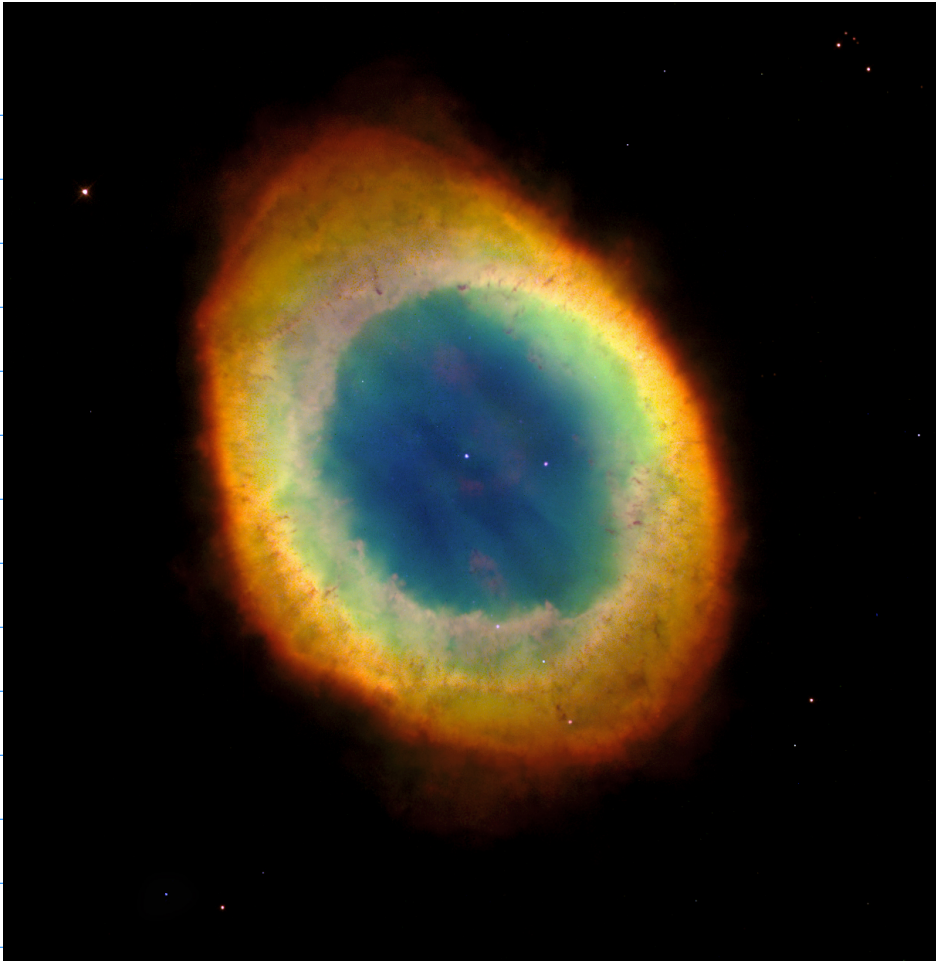
# REMNANTS OF A MEDIUM MASS ( $0.5M_{\odot} < M < 8M_{\odot}$ )

STAR:

PLANETARY NEBULA: SPHERICAL SHELL OF THE STAR'S MATERIAL PUSHED OUT BY THE THERMAL AND RADIATION PRESSURE DURING THE FINAL RED GIANT STAGE



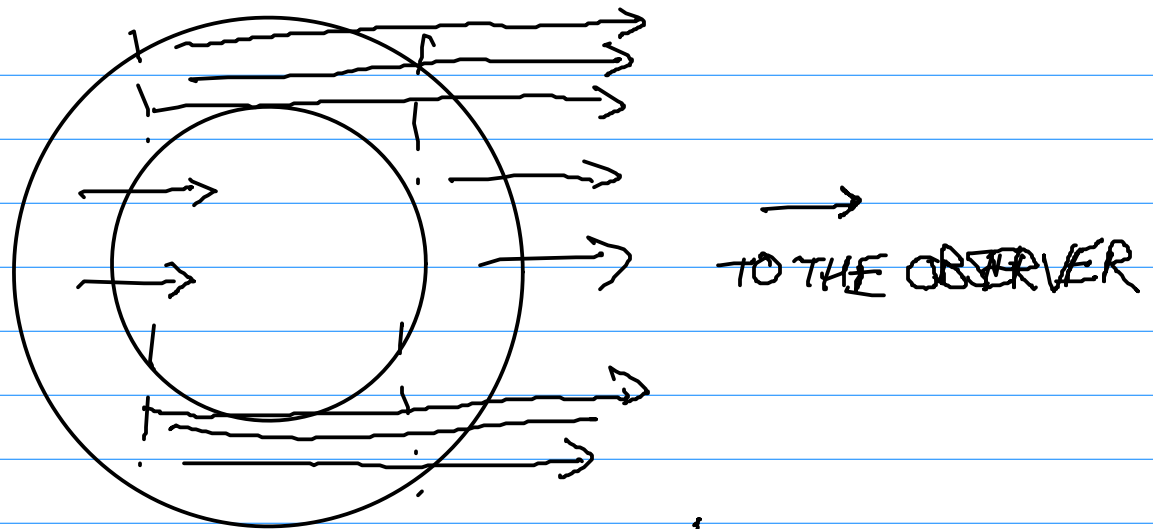
EXAMPLES OF PLANETARY NEBULAE:



RING  
NEBULA



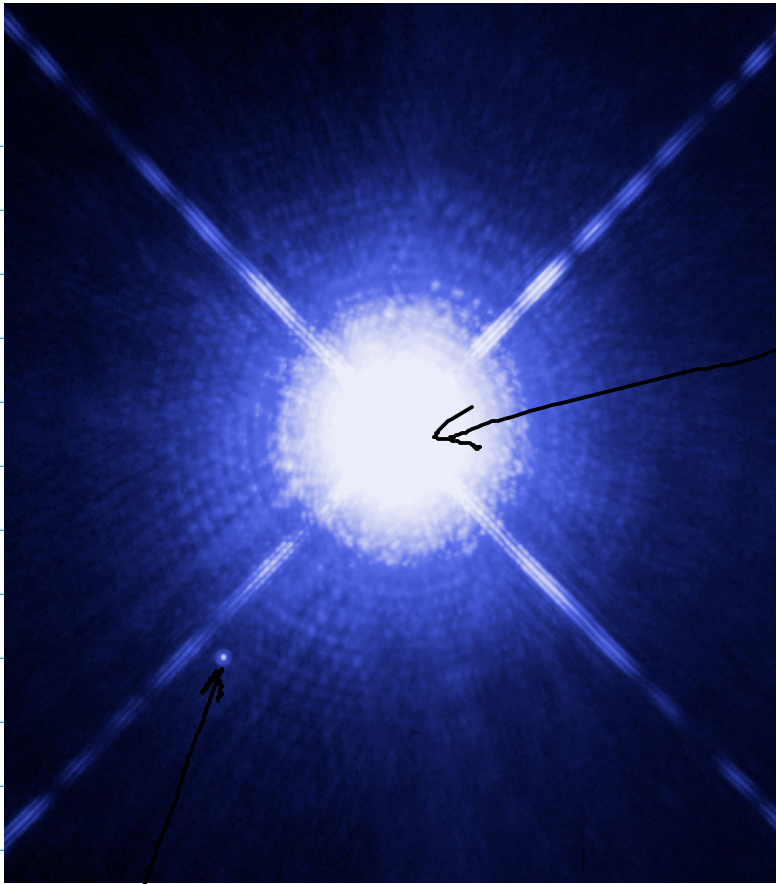
HELIX NEBULA



WE SEE THEM AS A RING INSTEAD OF SPHERICAL SHELL.

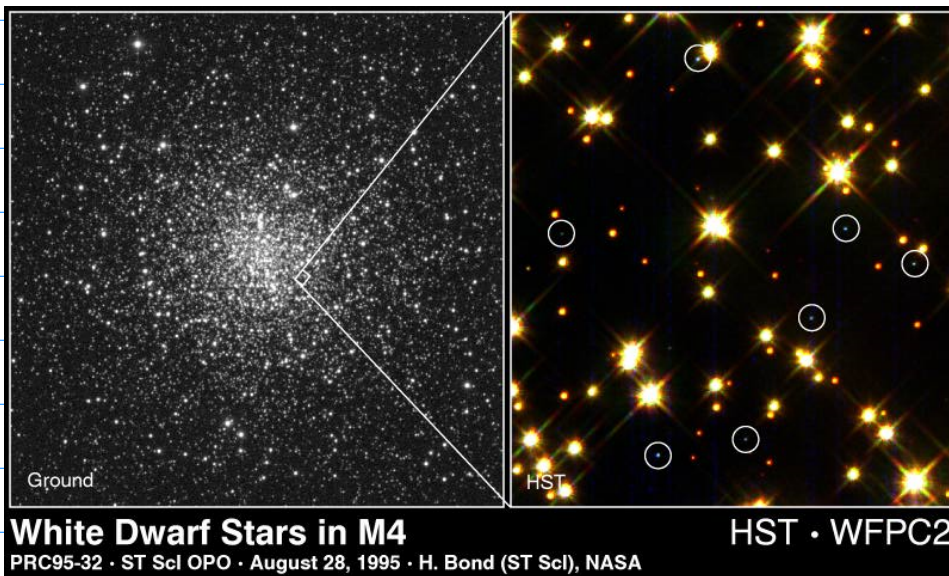
THEIR NAME ("PLANETARY") COMES FROM THE FACT THAT WHEN VIEWED THROUGH A SMALL TELESCOPE THEY APPEAR AS BLUE-GREEN, JUST LIKE THE PLANETS URANUS AND NEPTUNE, BUT THEY HAVE NOTHING TO DO WITH PLANETS OR PLANET FORMATION.

EXAMPLES OF WHITE DWARFS:



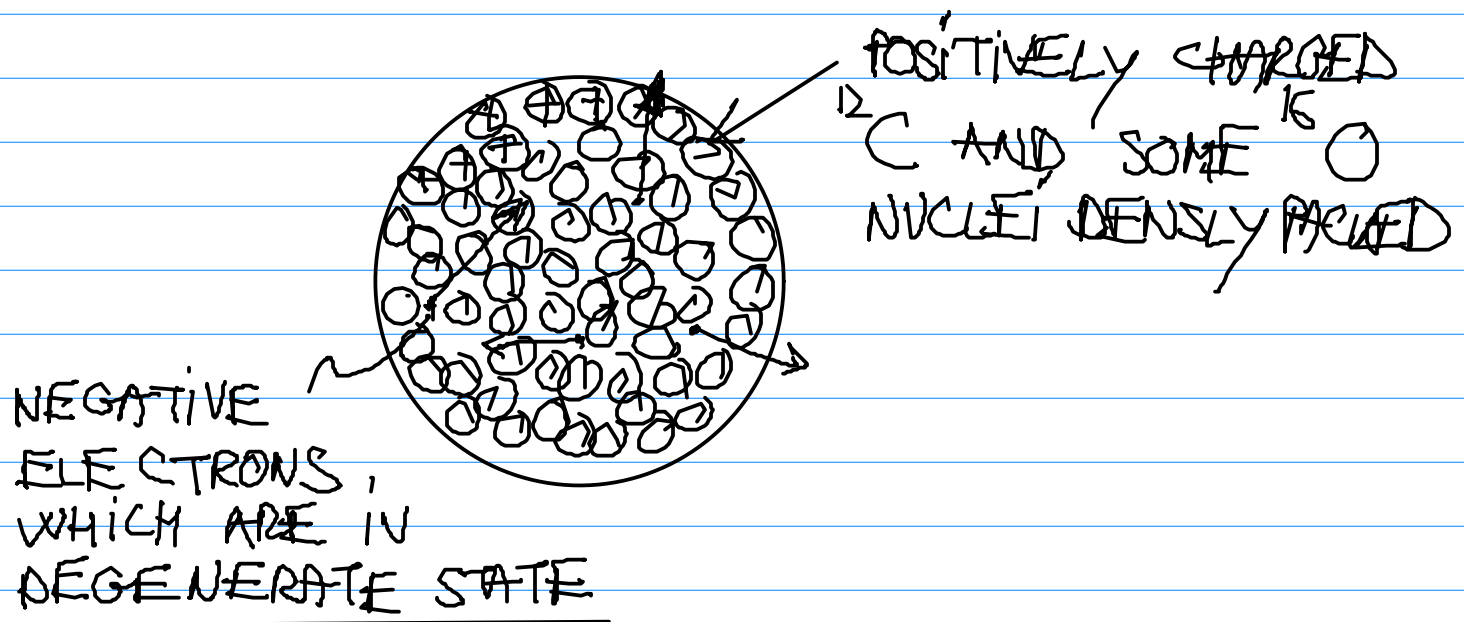
SIRIUS A  
(NORMAL MAIN  
SEQUENCE  
STAR)

SIRIUS B (WHITE DWARF)

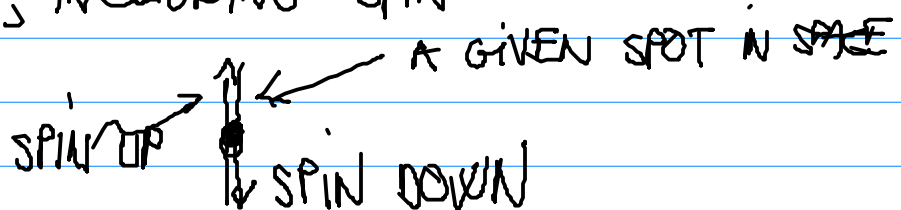


WHITE DWARFS ARE VERY DENSE: DENSITY =  $1000 \frac{\text{kg}}{\text{cm}^3}$ . WHY DOESN'T IT COLLAPSE UNDER ITS OWN GRAVITY (IT STOPPED GENERATING ENERGY VIA FUSION)? IT IS SUPPORTED BY ELECTRON DEGENERACY PRESSURE.

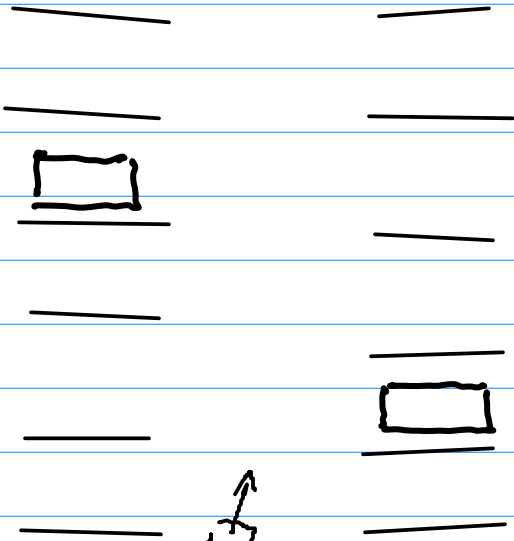
STRUCTURE OF A WHITE DWARF:



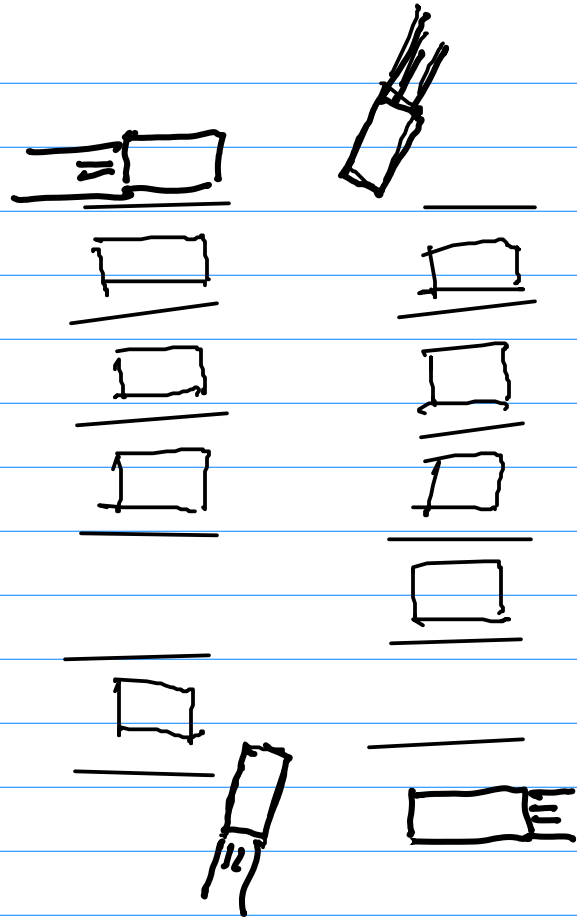
QUANTUM MECHANICS: ELECTRONS OBEY PAULI PRINCIPLE - NO TWO ELECTRONS CAN BE IN THE SAME STATE, INCLUDING SPIN



# ANALOGY:



CAR MOVES SLOWLY AS THERE MANY PARKING SPOTS  
(STATE OF NORMAL ELECTRONS)



CARS ARE RACING TO FIND A FREE PARKING SPOT  
(STATE OF DEGENERATE ELECTRONS)