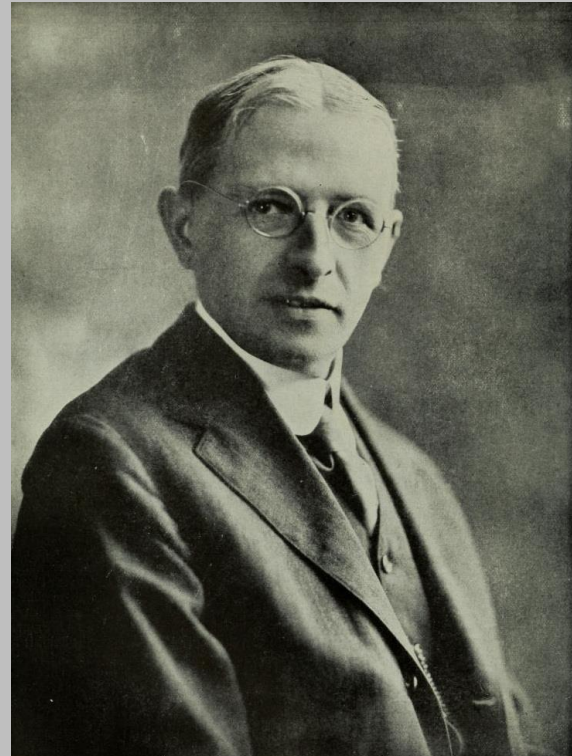
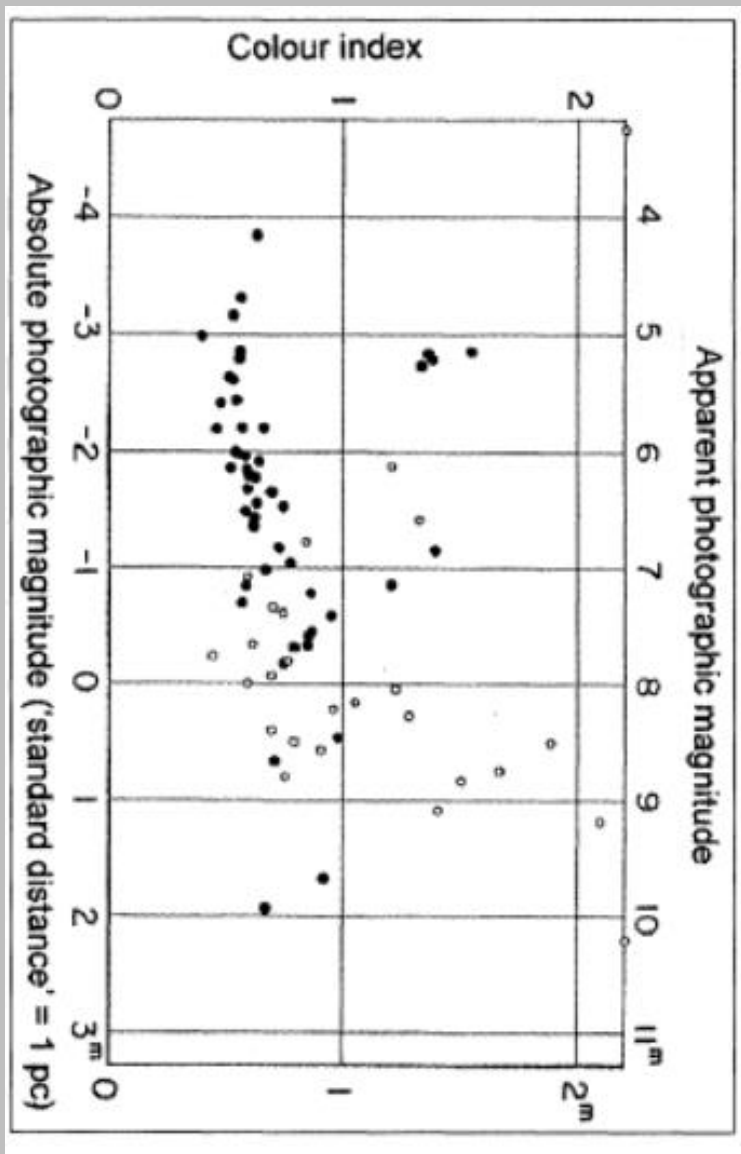


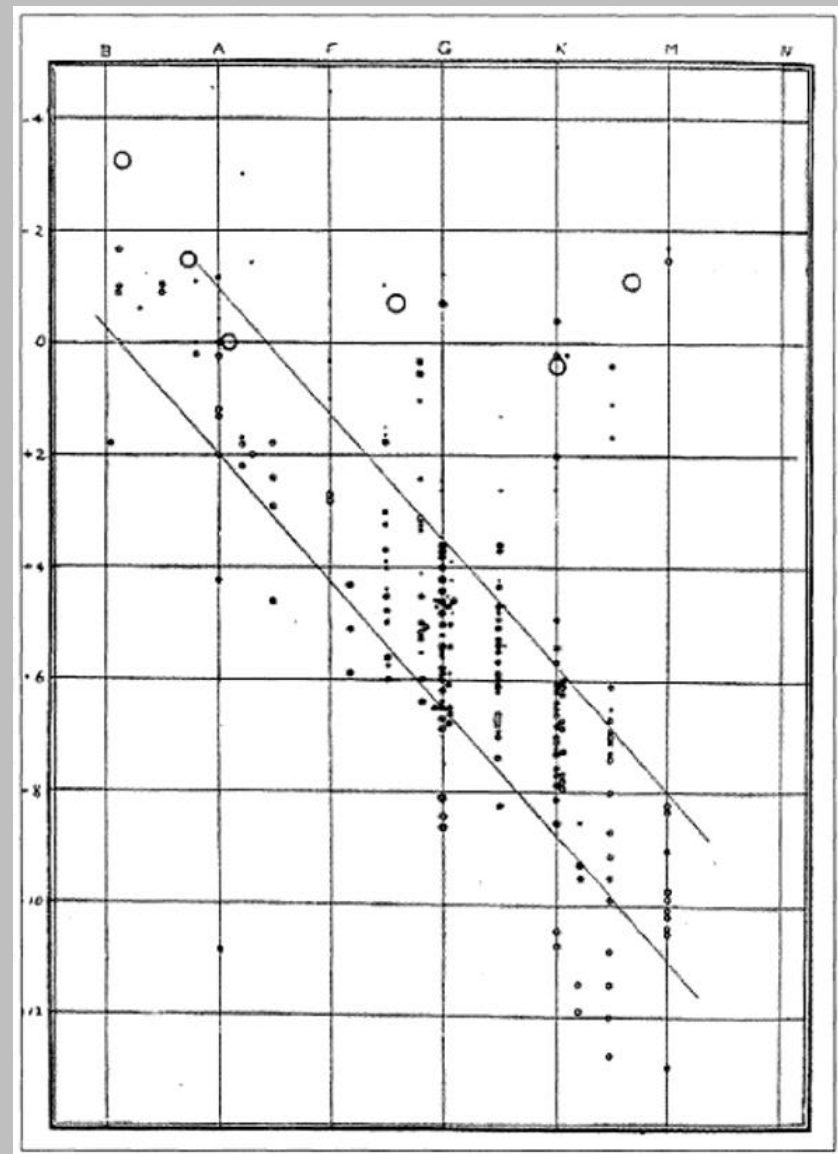
Hertzsprung Russell diagram

- Sterkleuren en HR diagram
- HR en ster evolutie
- HR diagram in het ruimtevaart tijdperk
- De zon, ster onder de sterren

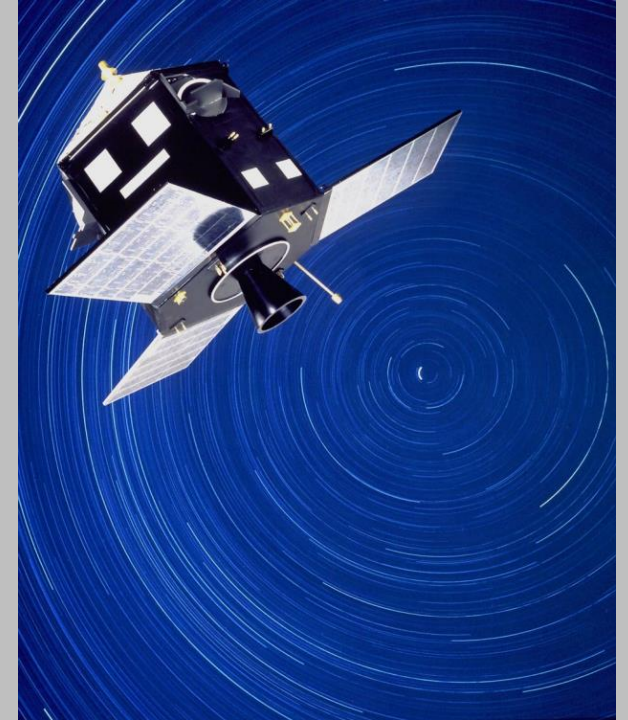
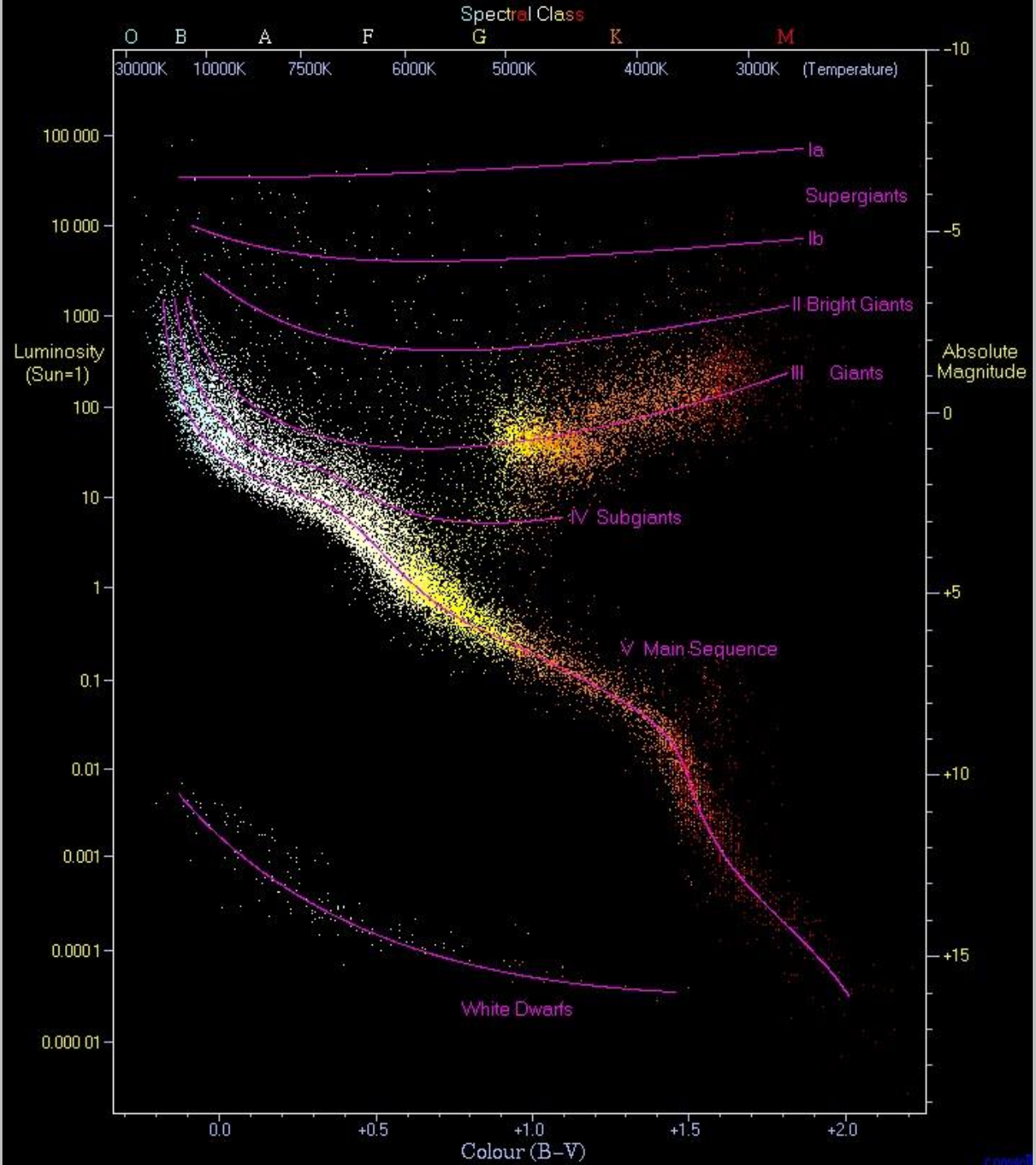




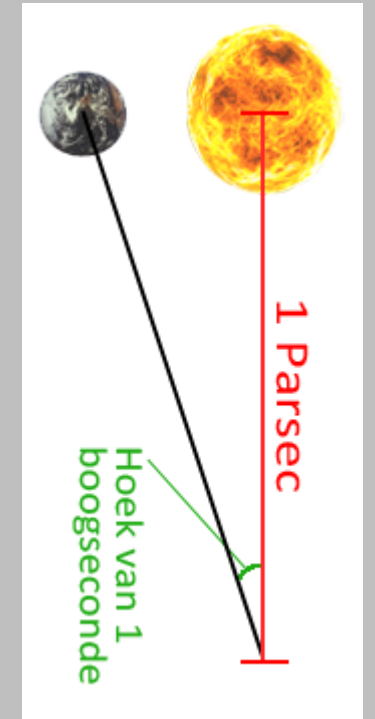
Origineel Diagram E. Hertzsprung, Hyaden

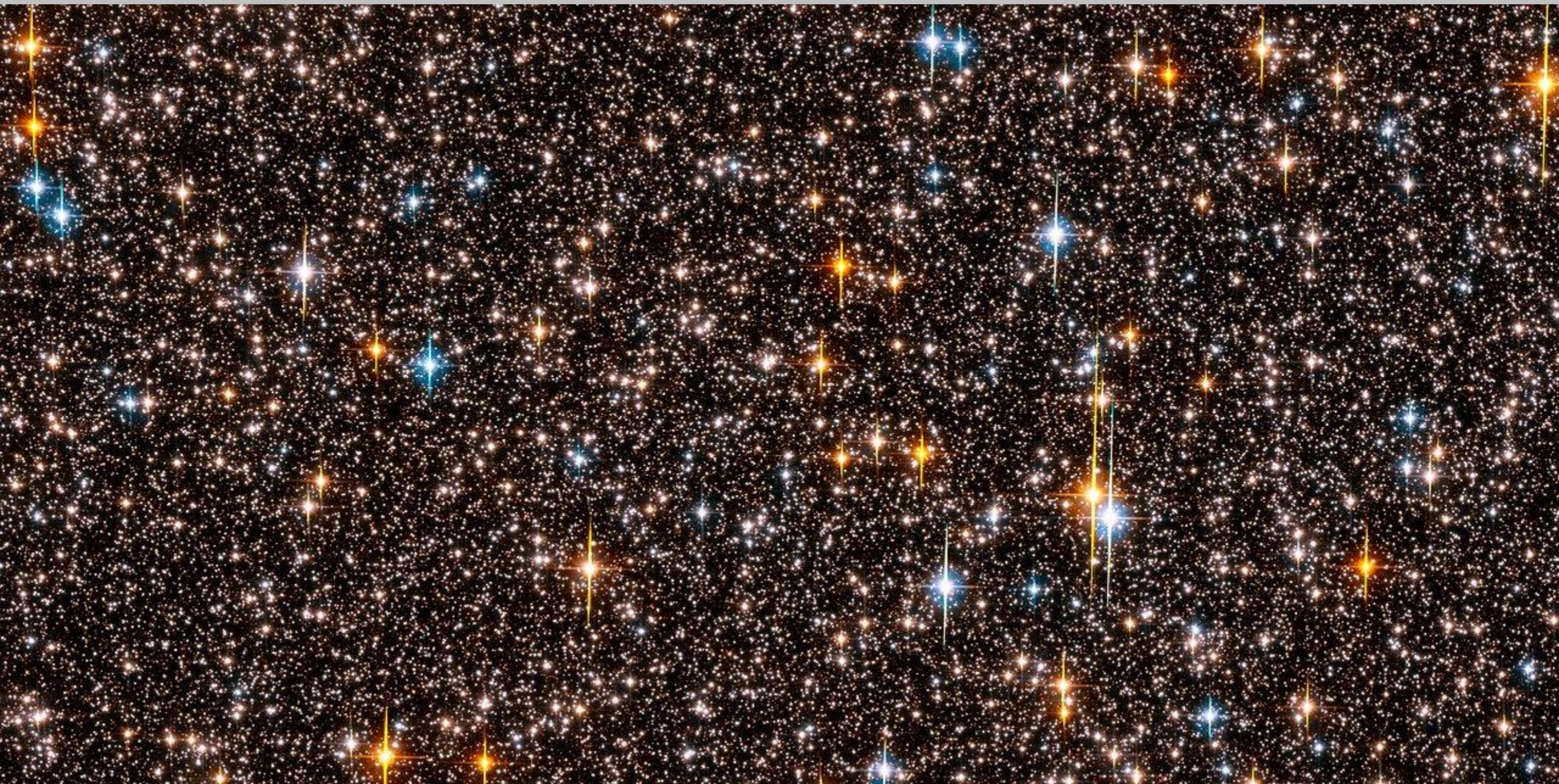


Origineel Diagram H. N. Russell, sterccatalogus



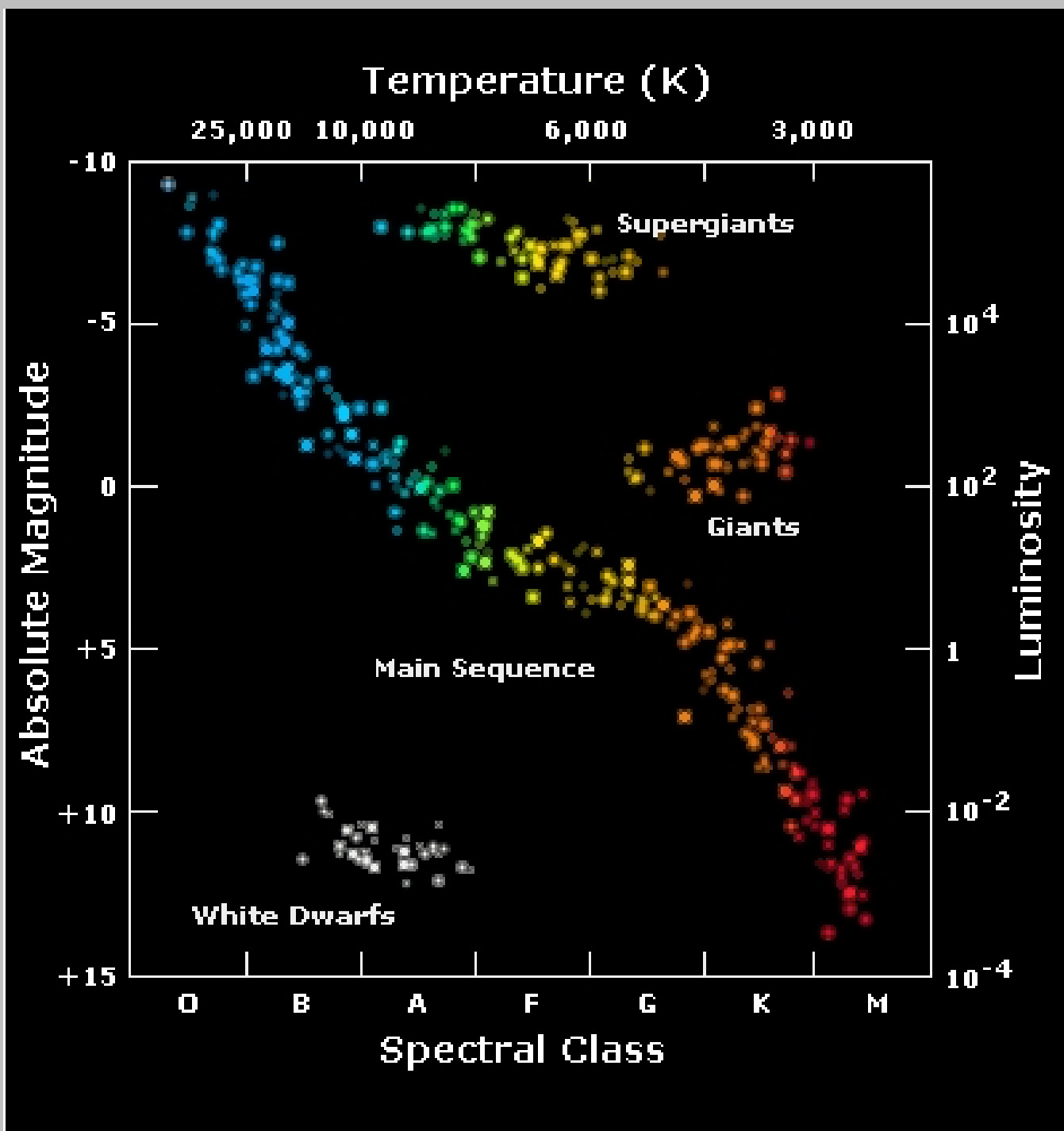
- HR diagram geeft lichtkracht van een ster tegen temperatuur of kleur; lichtkracht in vergelijking met de zon of als absolute magnitude
- M = Absolute magnitude magnitude van een ster op een afstand van 10 Mpc
- $M = m - 5 \cdot \log(\text{afstand}) + 5$; afstand in parsec (1 pc = 3,26 lichtjaar) met m = schijnbare magnitude
- Voor een ster op 1 parsec is de maximale hoek tussen richting zon en de aarde gezien vanuit de ster 1 boogseconde














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Star Colors

			
Class	O	B	A
Temp (K)	~30,000 - ~60,000	10,000 - ~30,000	7,500 - 10,000
			
F	G	K	M
6,100 - 7,500	5,000 - 6,100	3,600 - 5,000	1,900 - 3,600

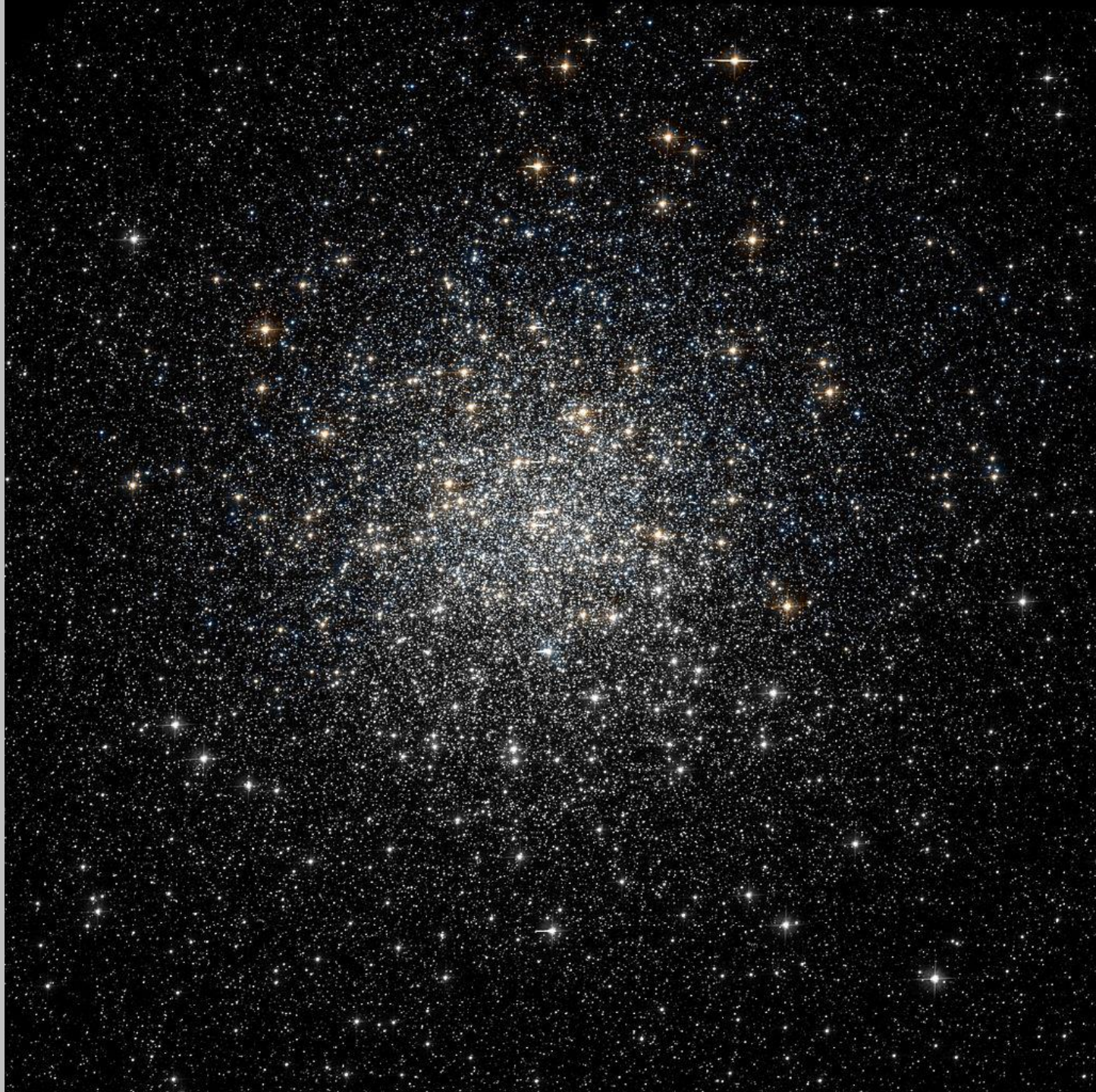
Ster evolutie familieonderzoek

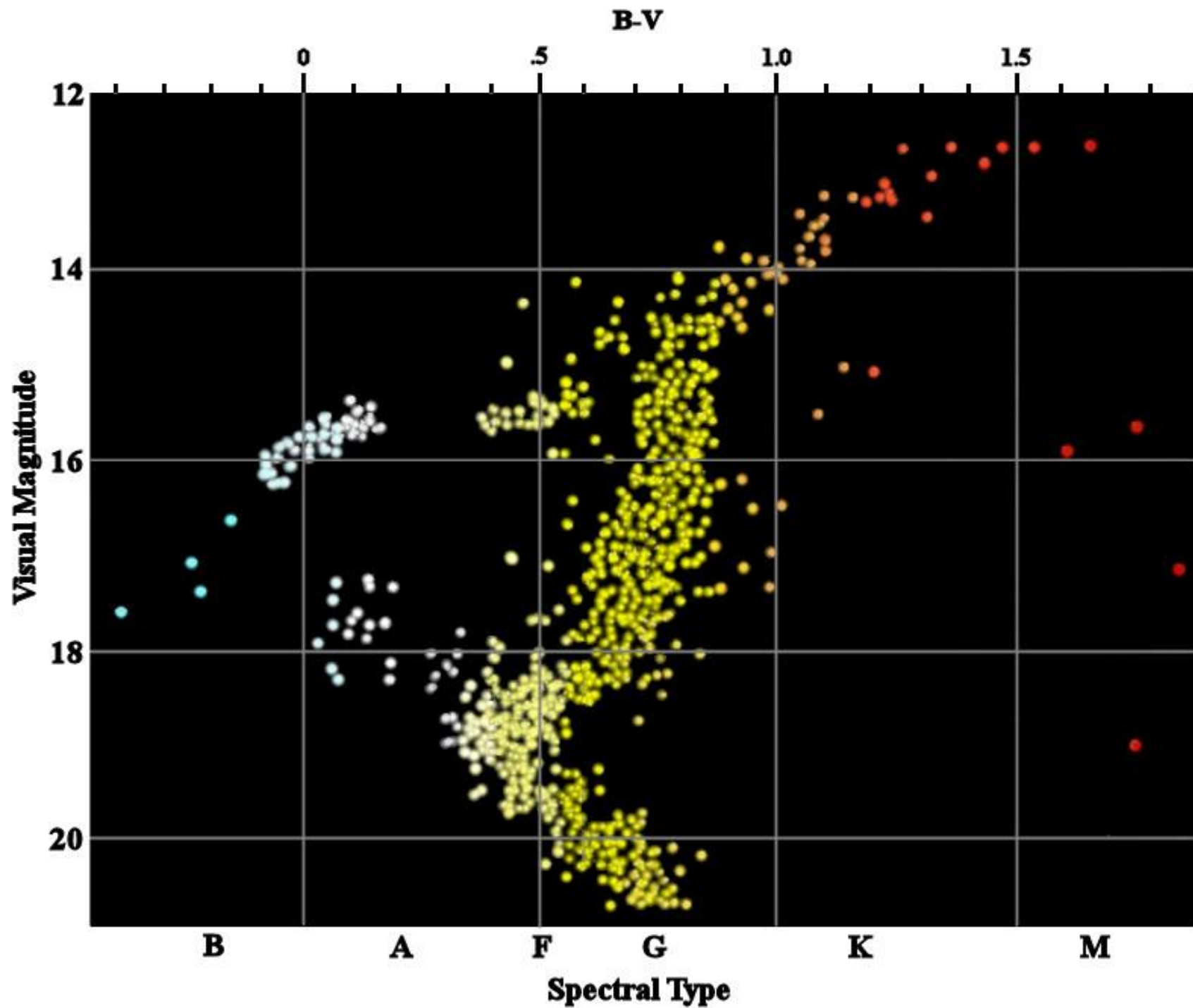
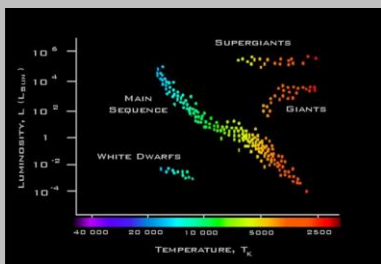
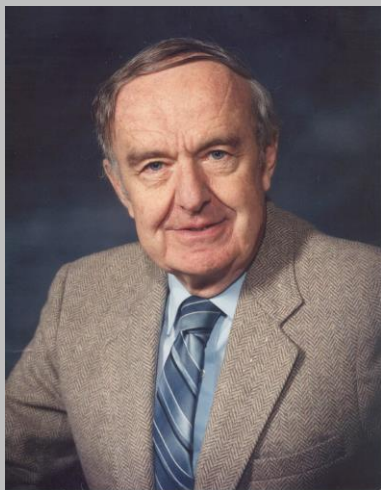


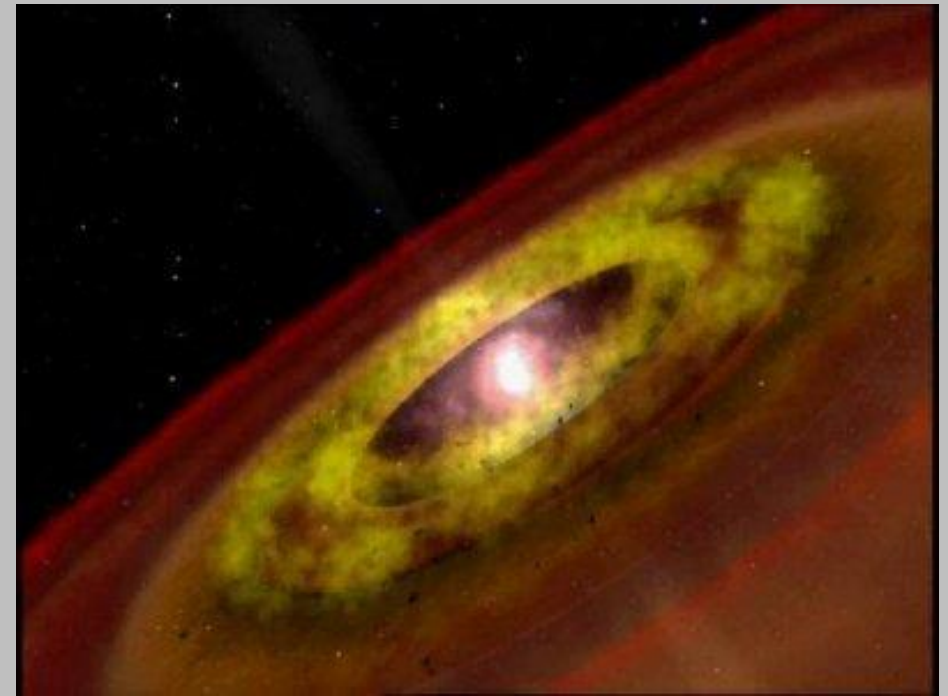
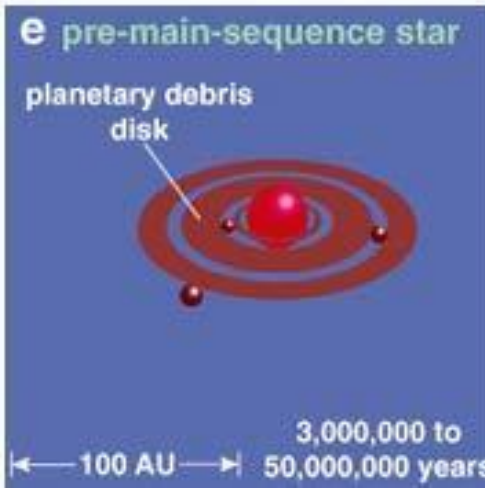
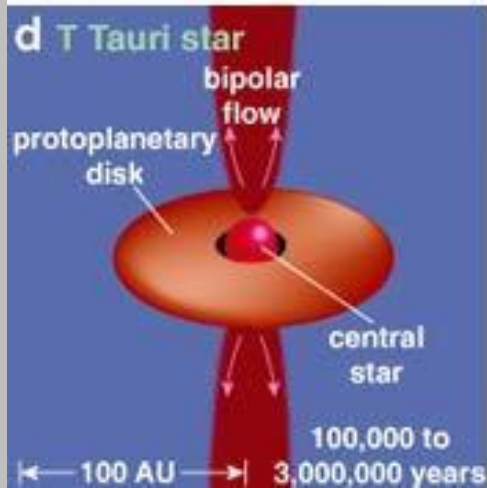
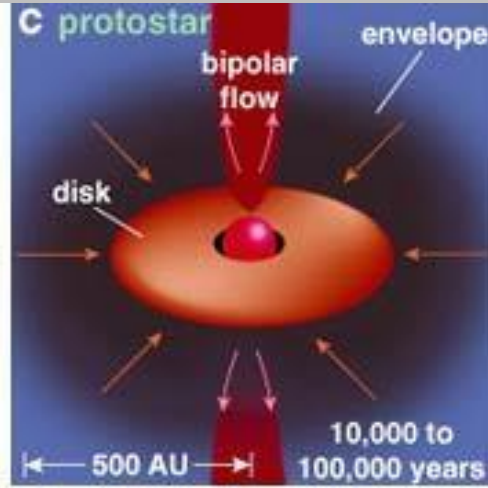
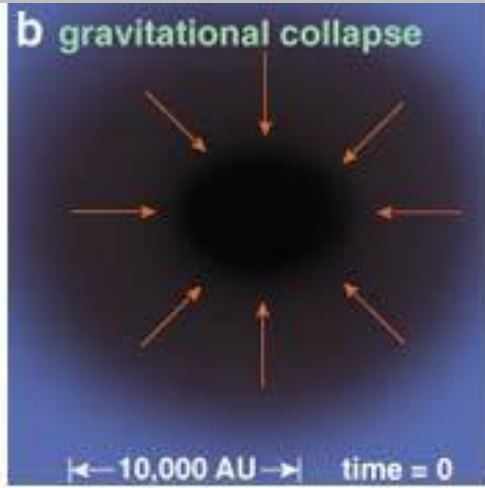
Klassiefoto de Schakel, Rijnsburg

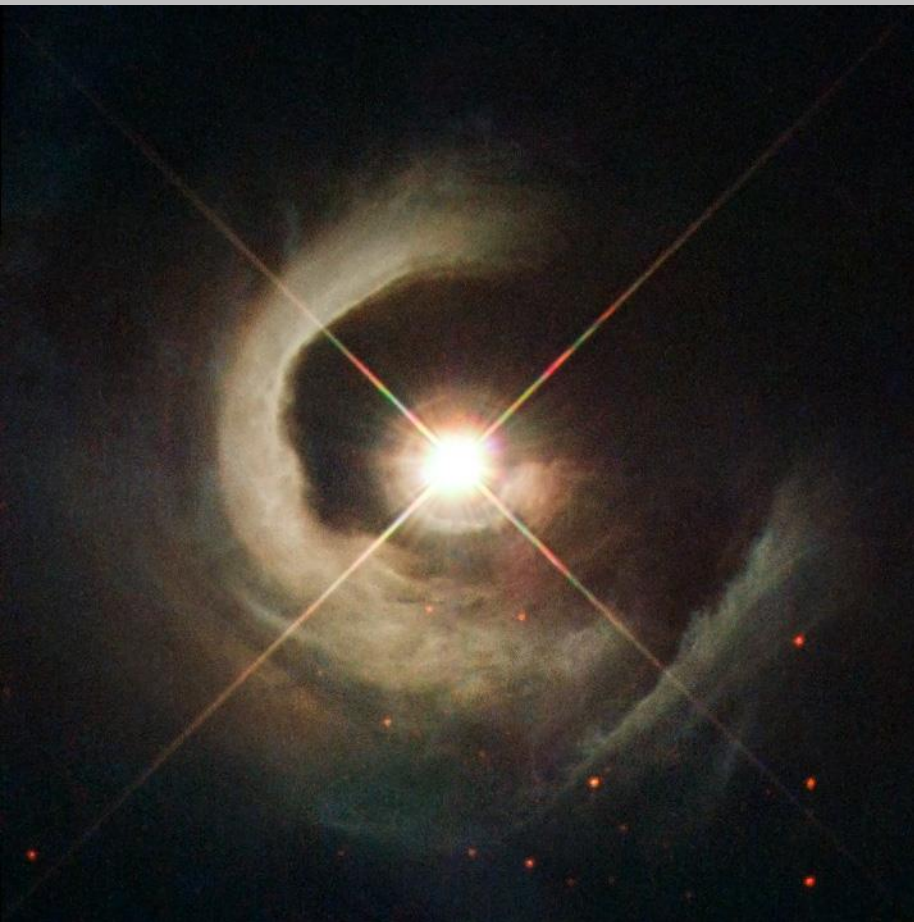


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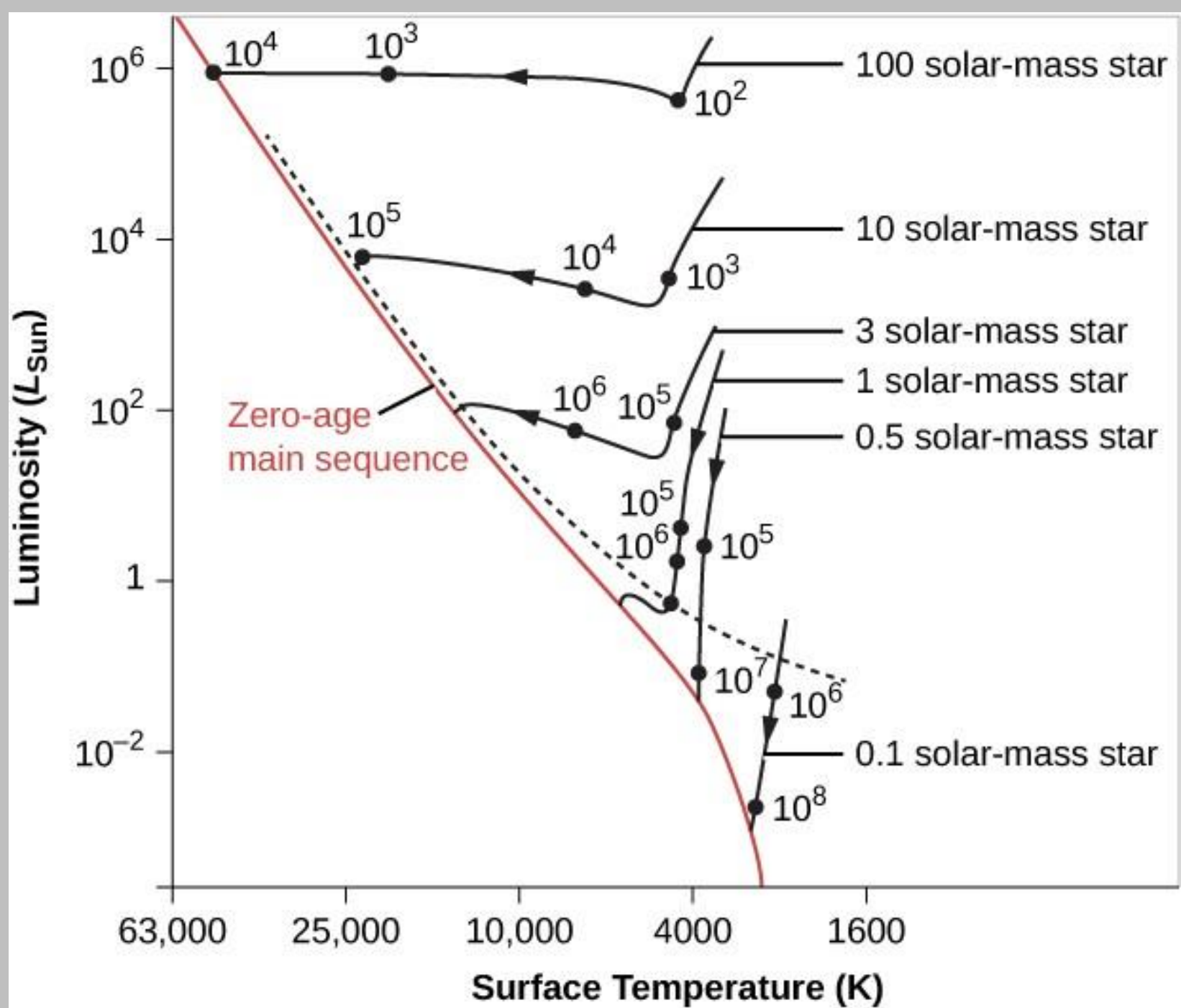


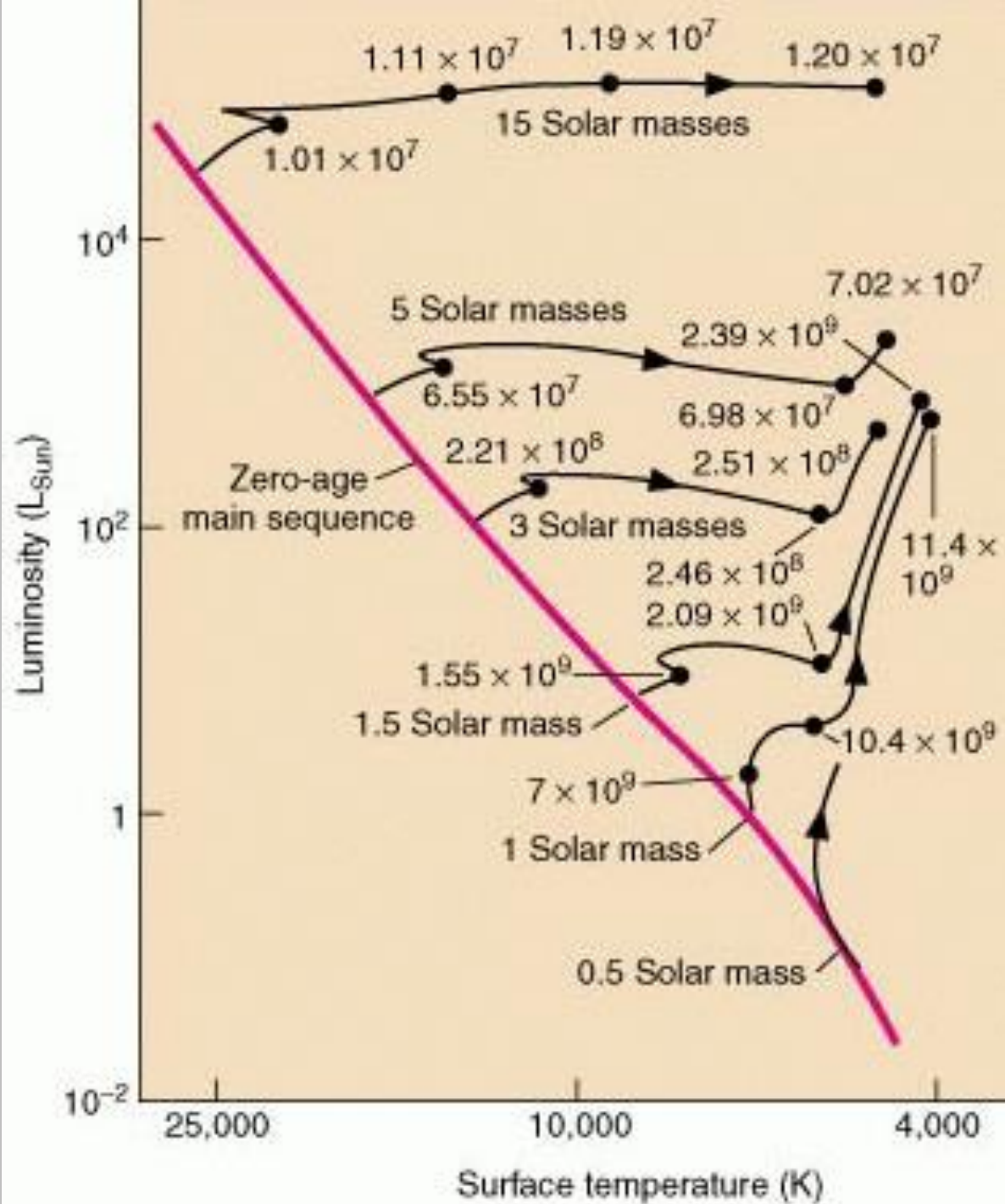






V1331 Cyg

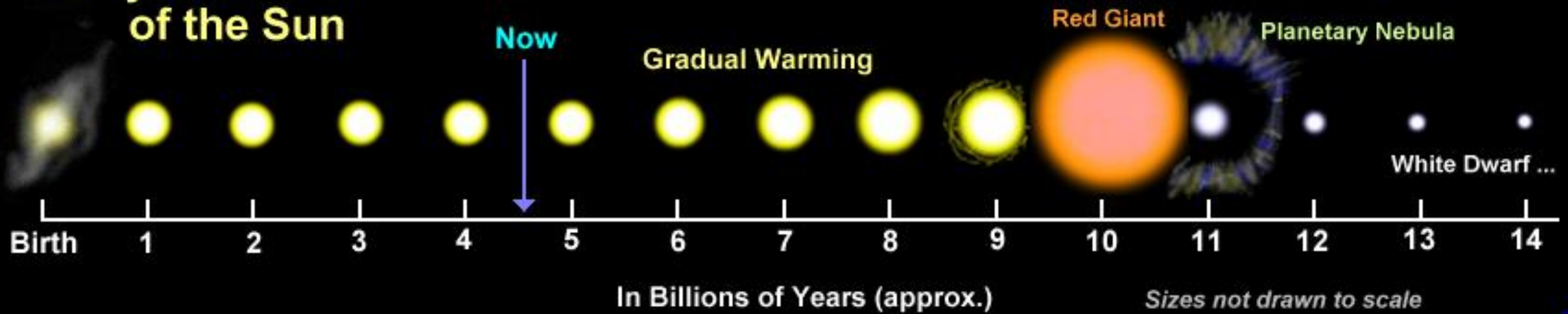


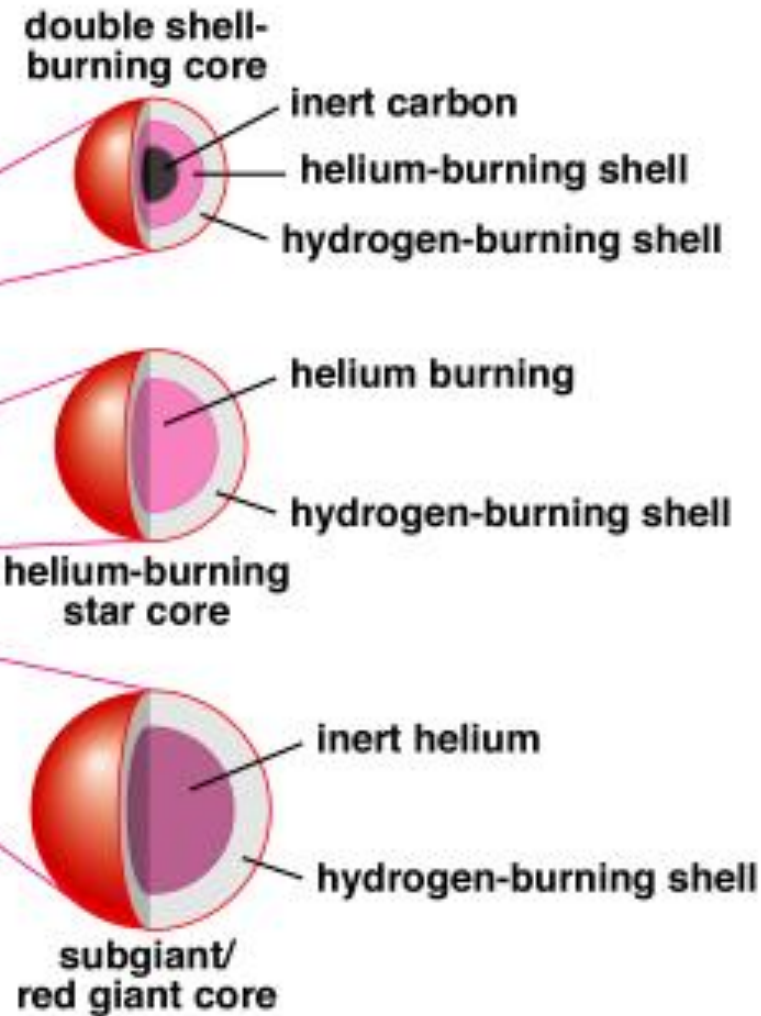
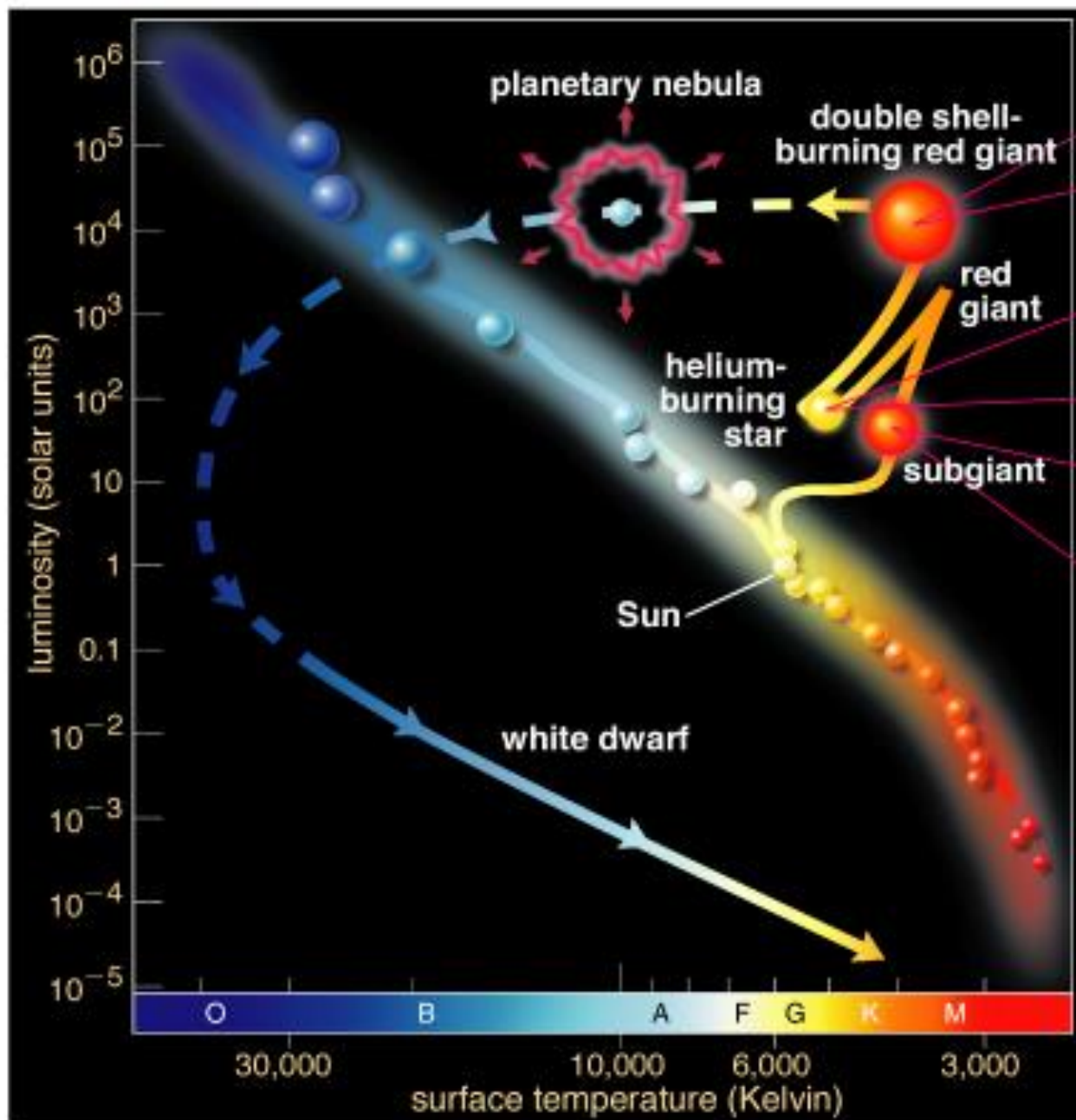


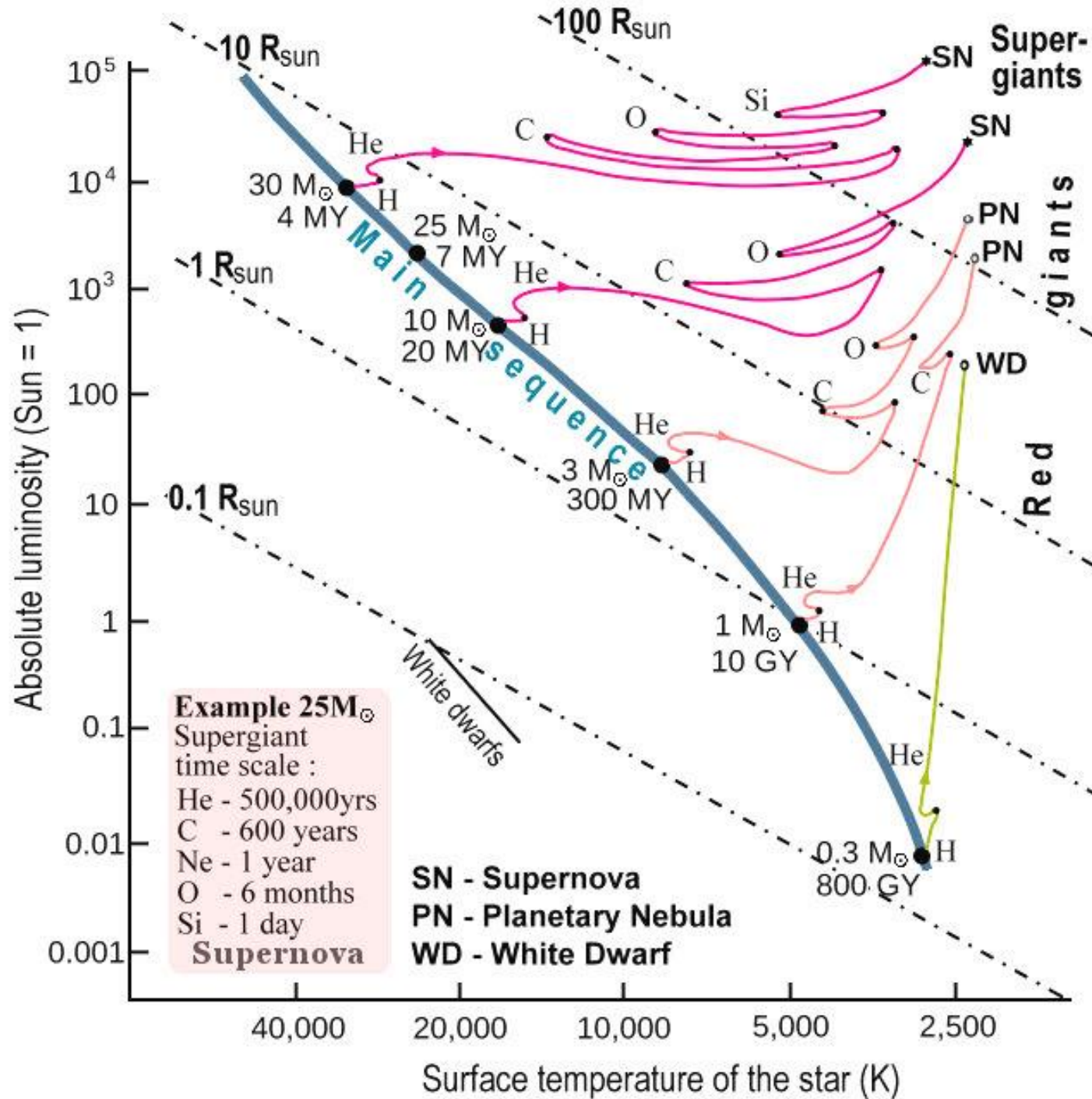
$$L \propto M^{3.5}$$

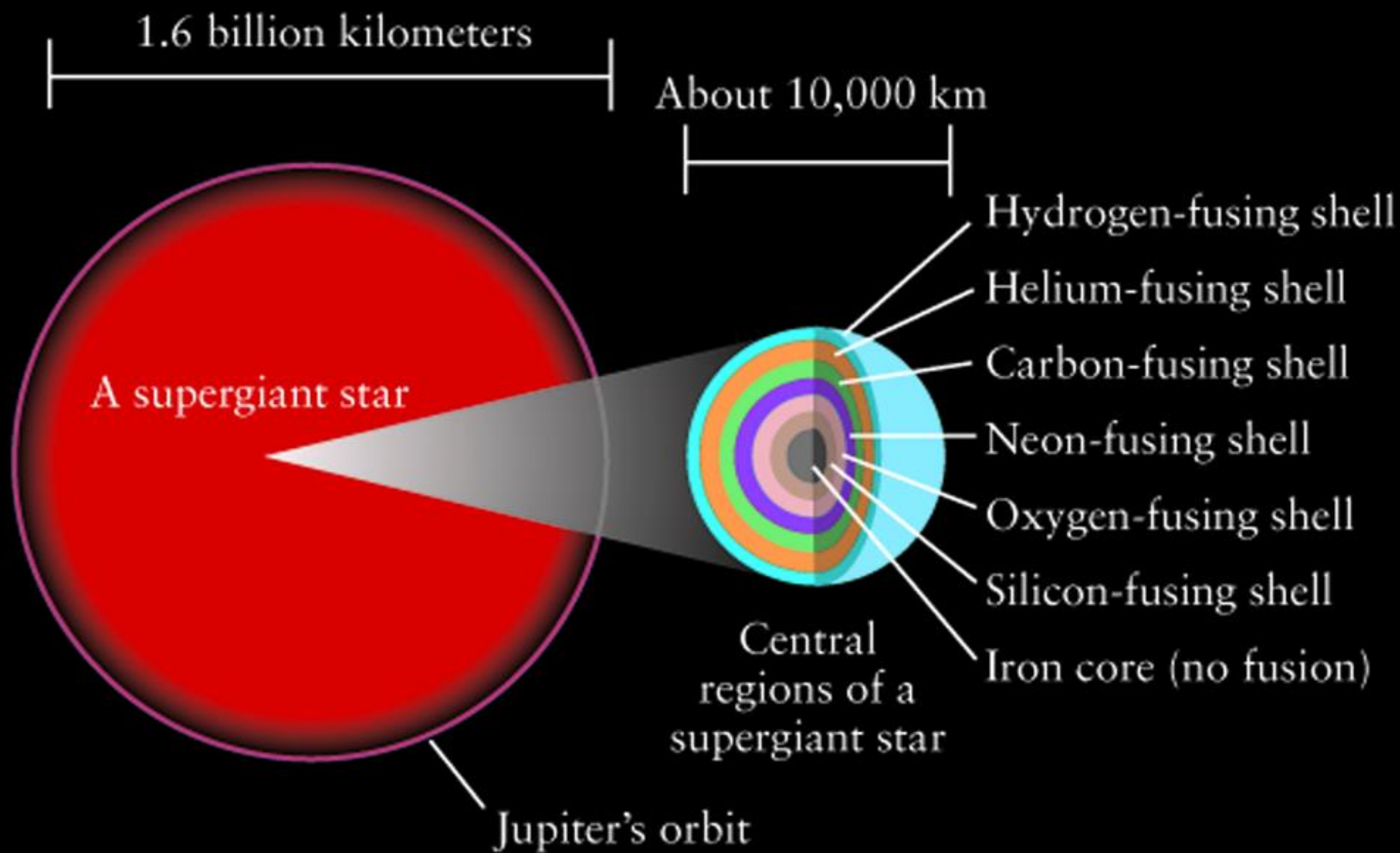
$$t_{\text{ms}} \propto M^{-2.5}$$

Life Cycle of the Sun











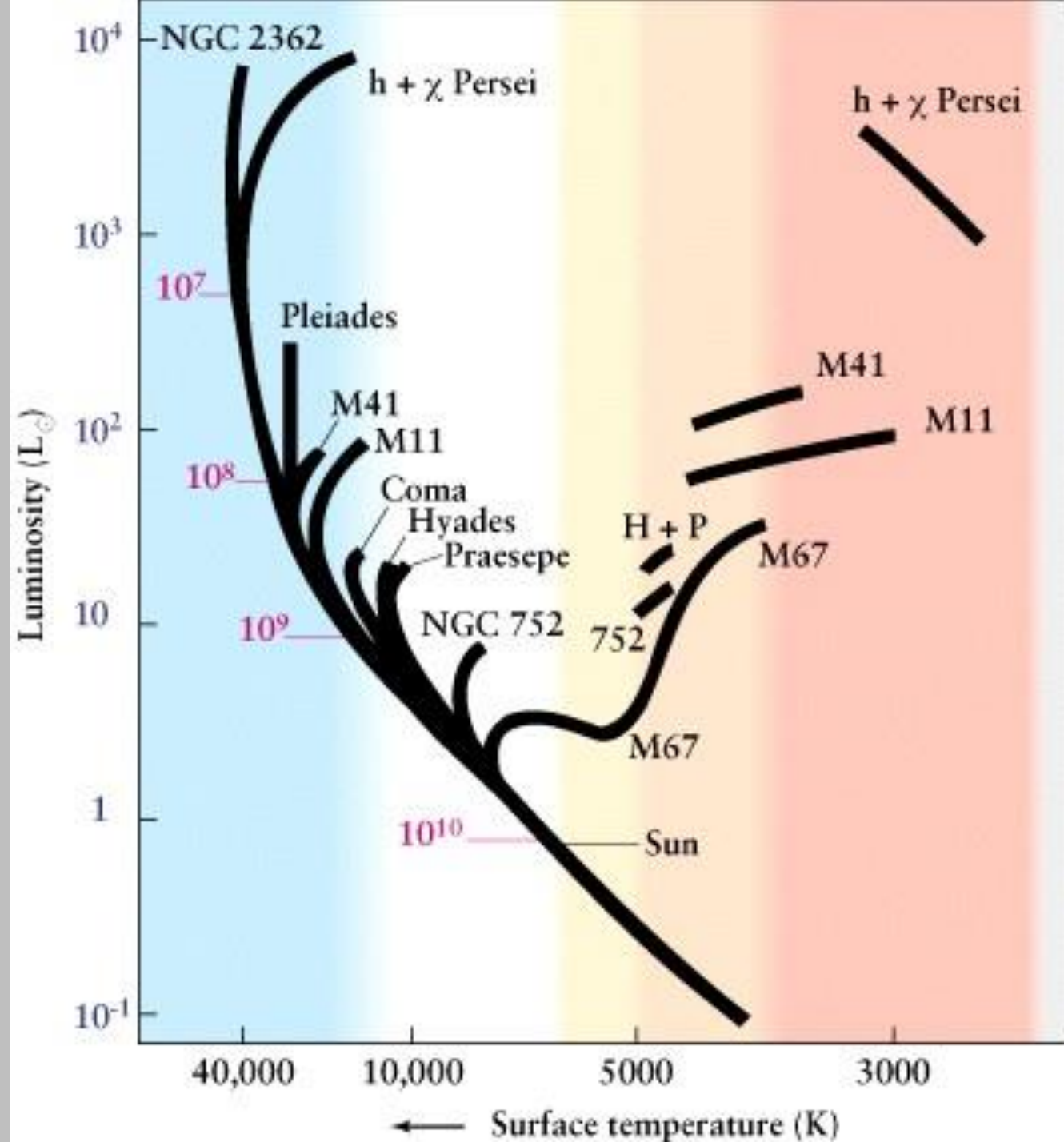




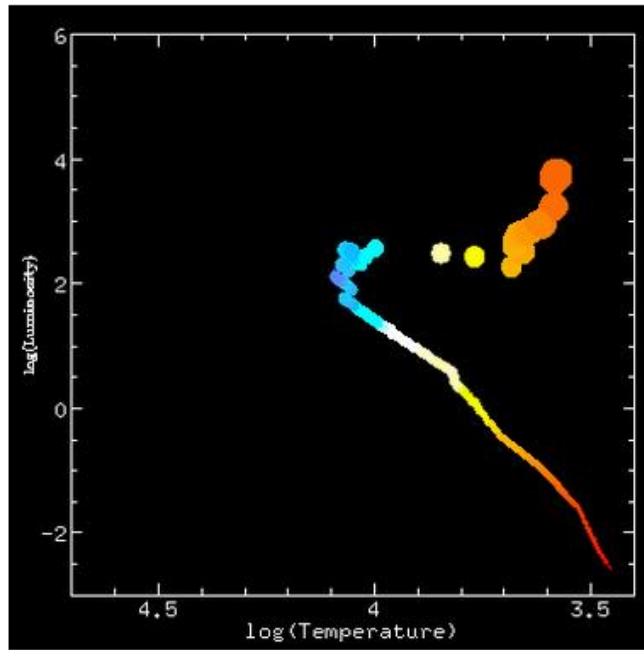
Image 1 Star Cluster, RCW 38



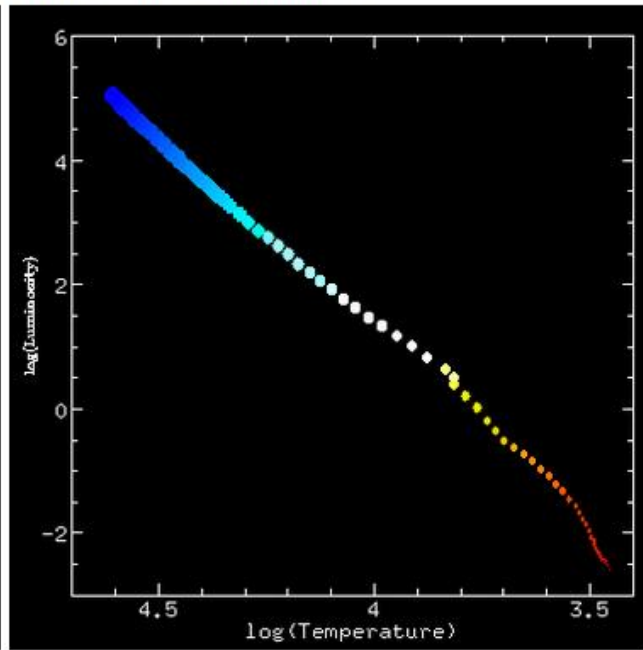
Image 2 Star Cluster, M 10



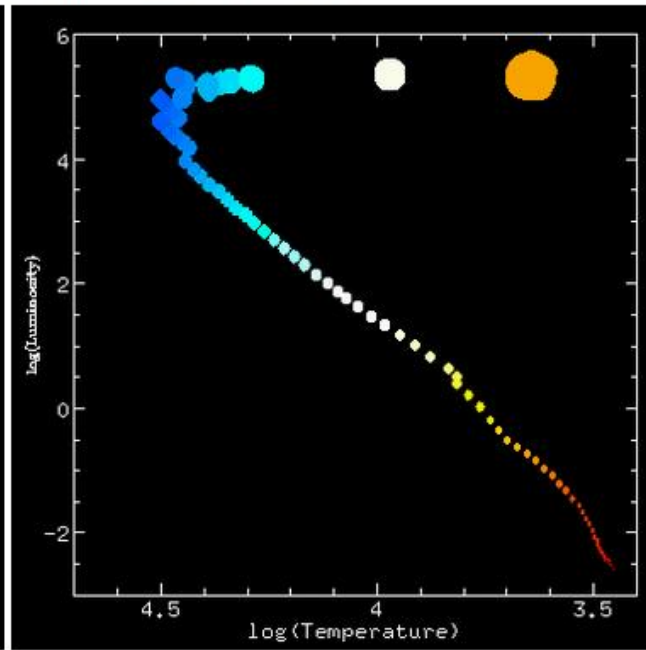
Image 3 Star Cluster, M 6



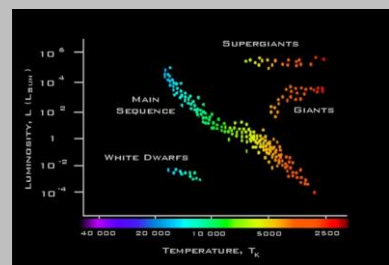
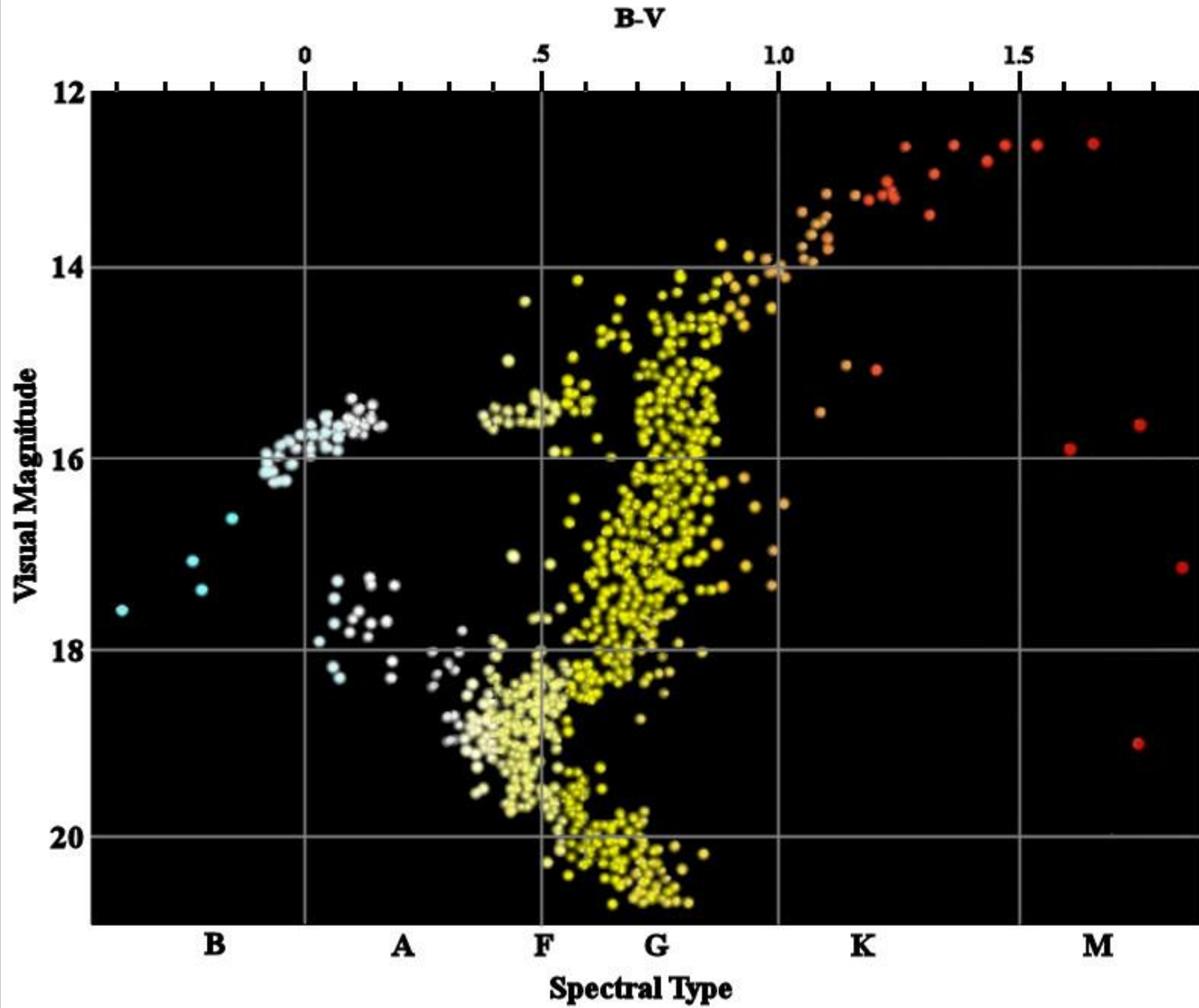
Hertzsprung Russell Diagram 1.

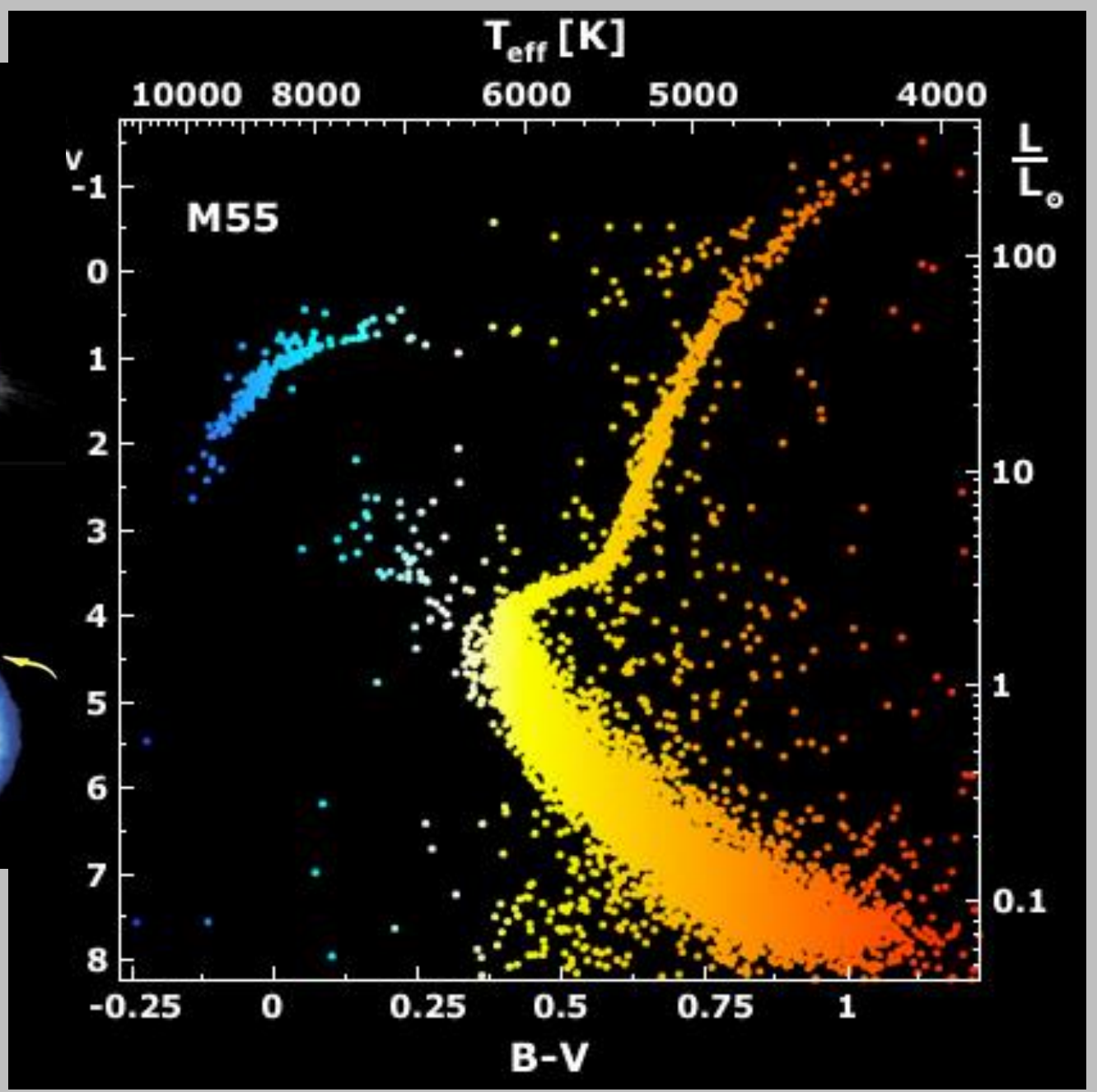
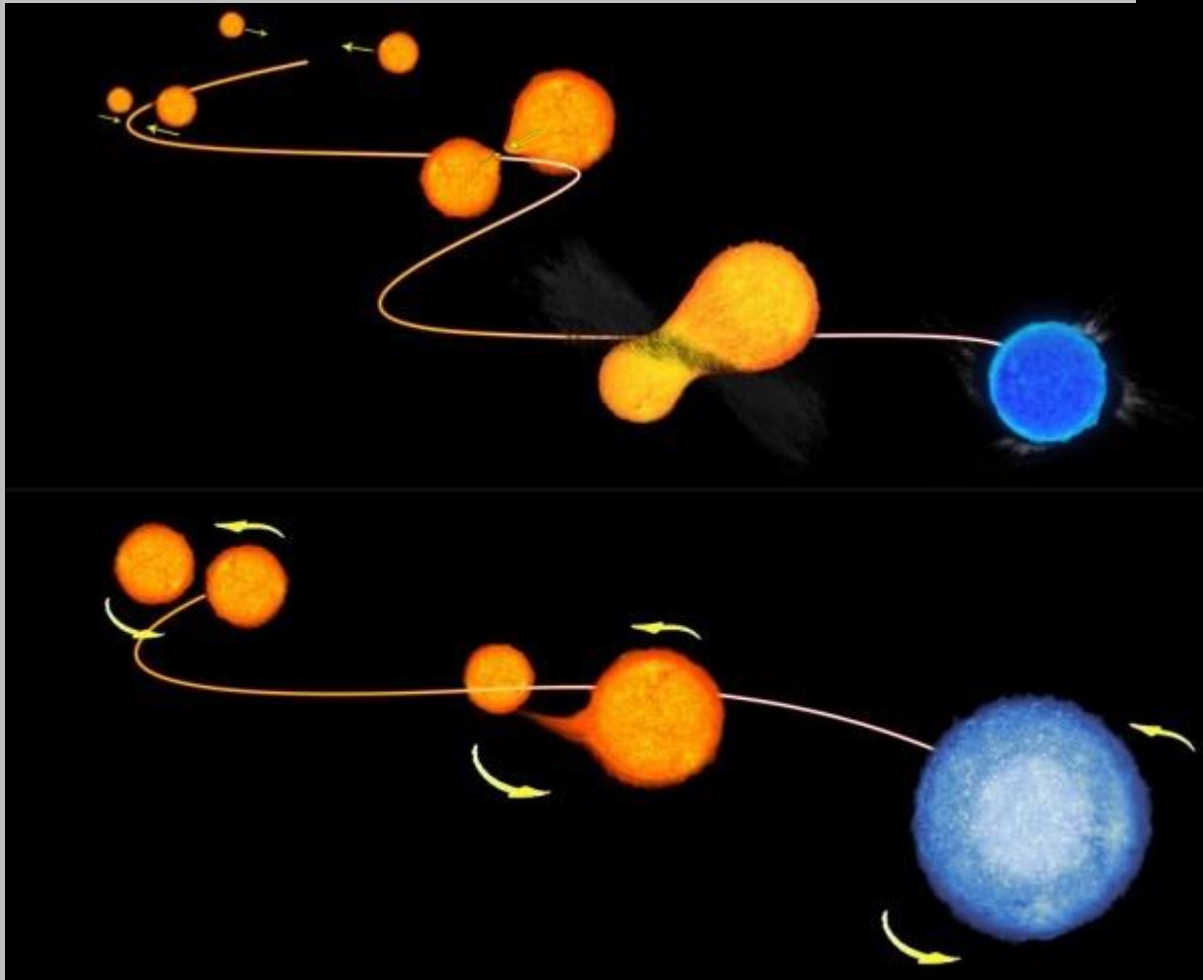


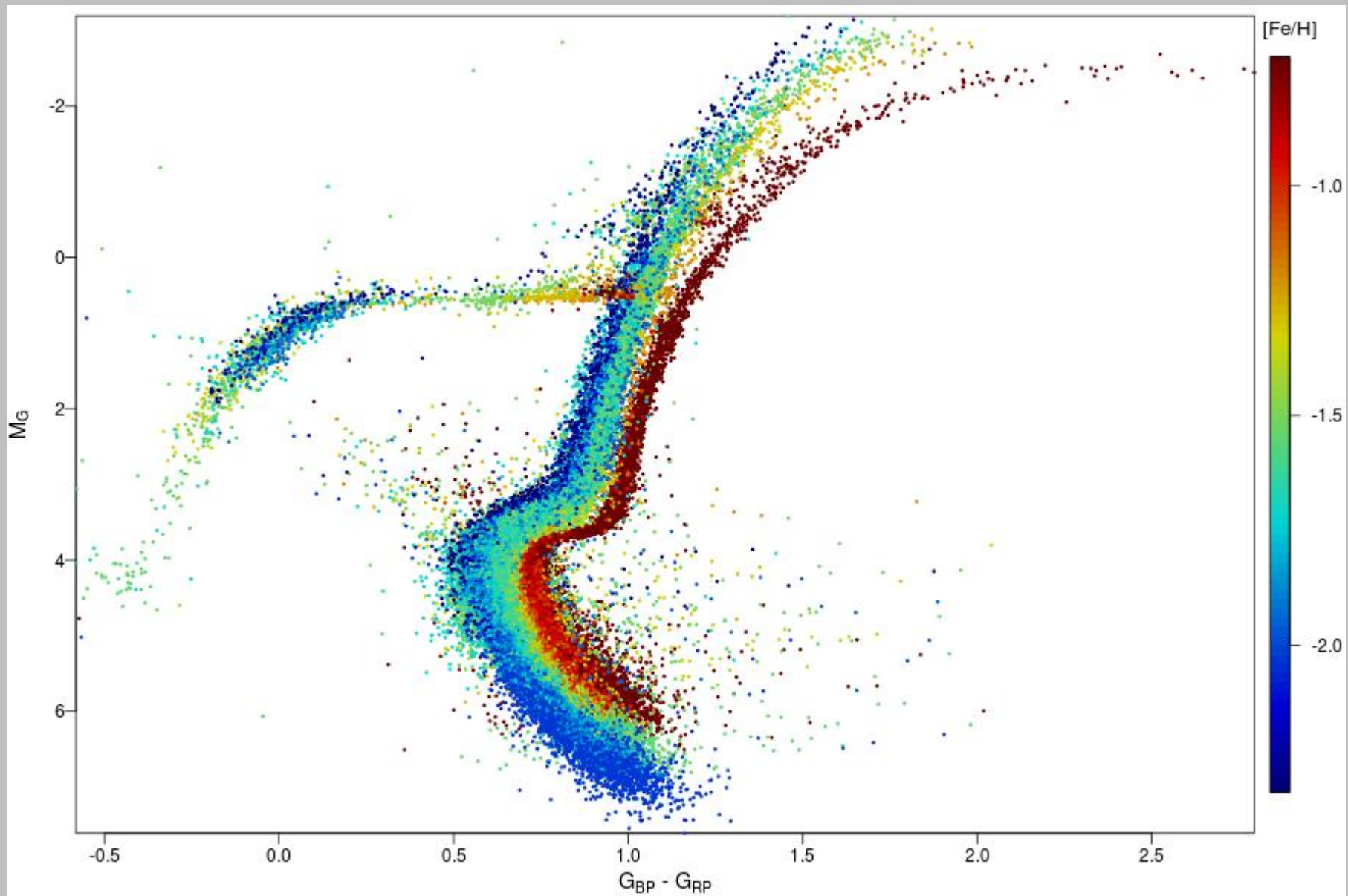
Hertzsprung Russell Diagram 2.



Hertzsprung Russell Diagram 3.

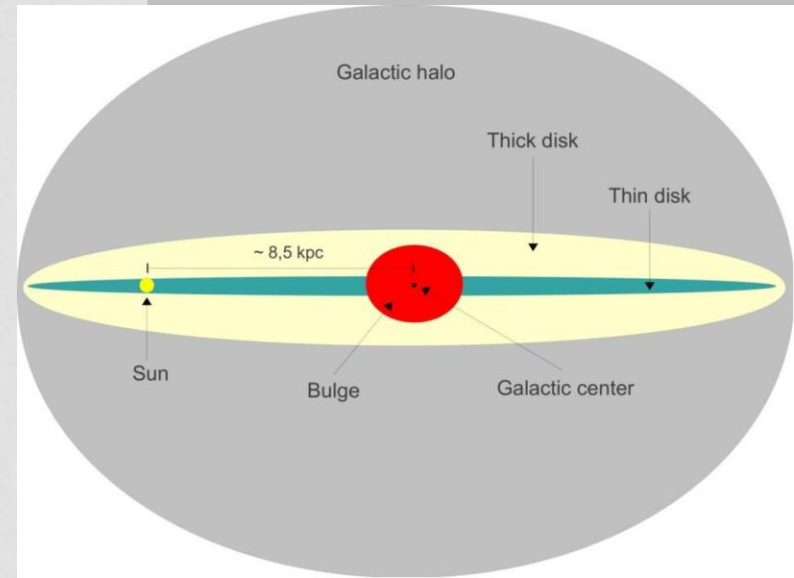
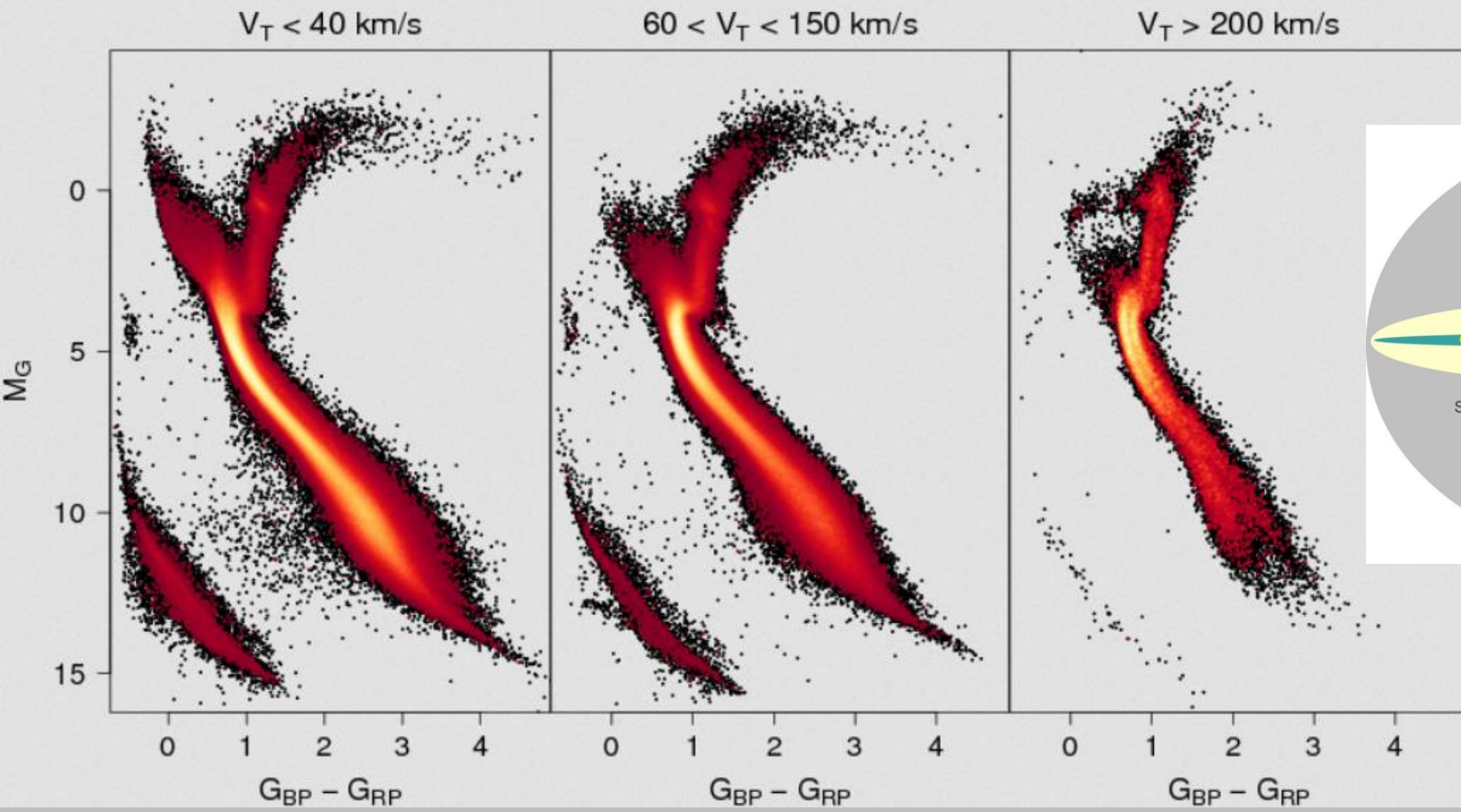


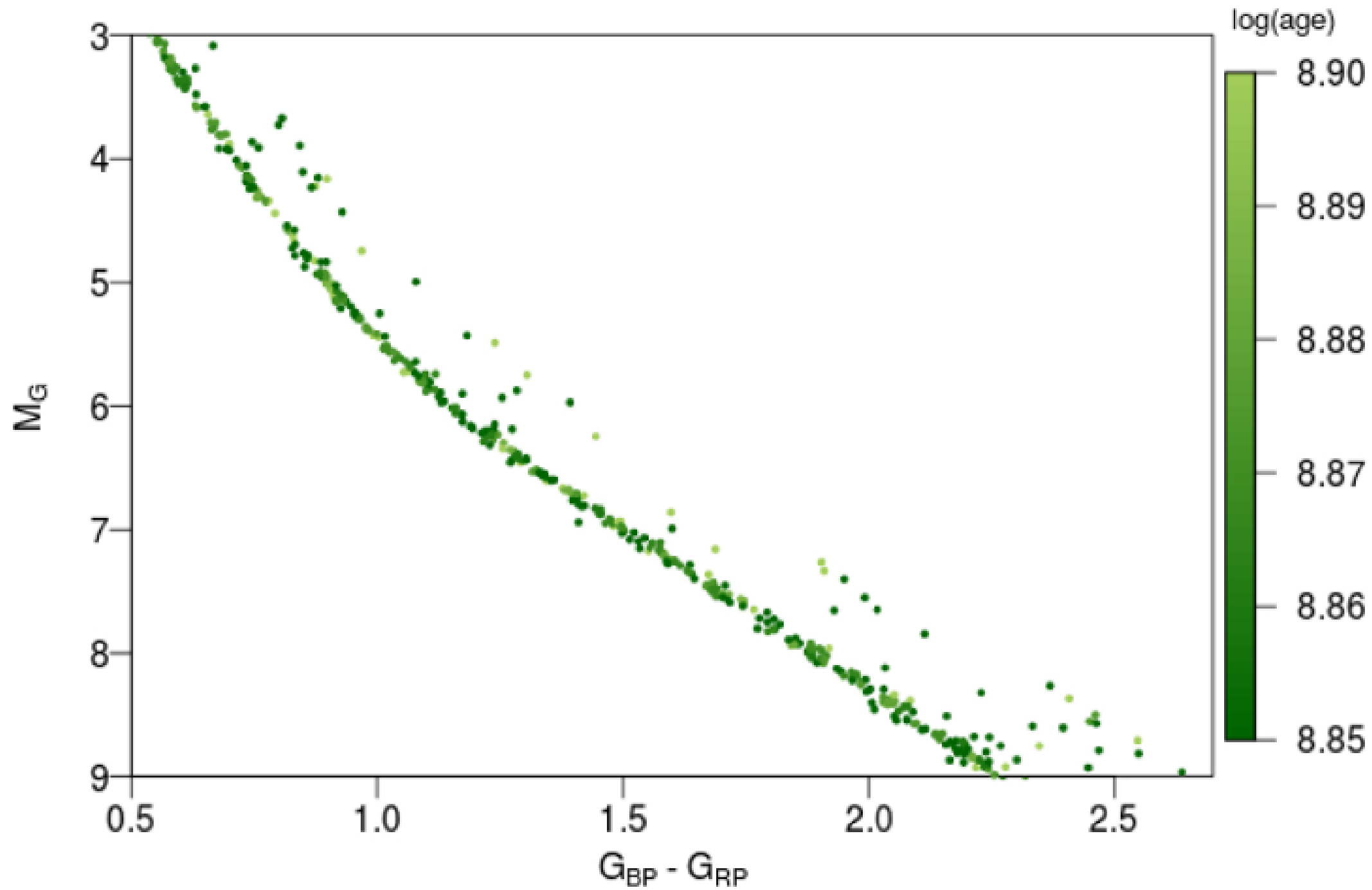




BP: 330–680 nm

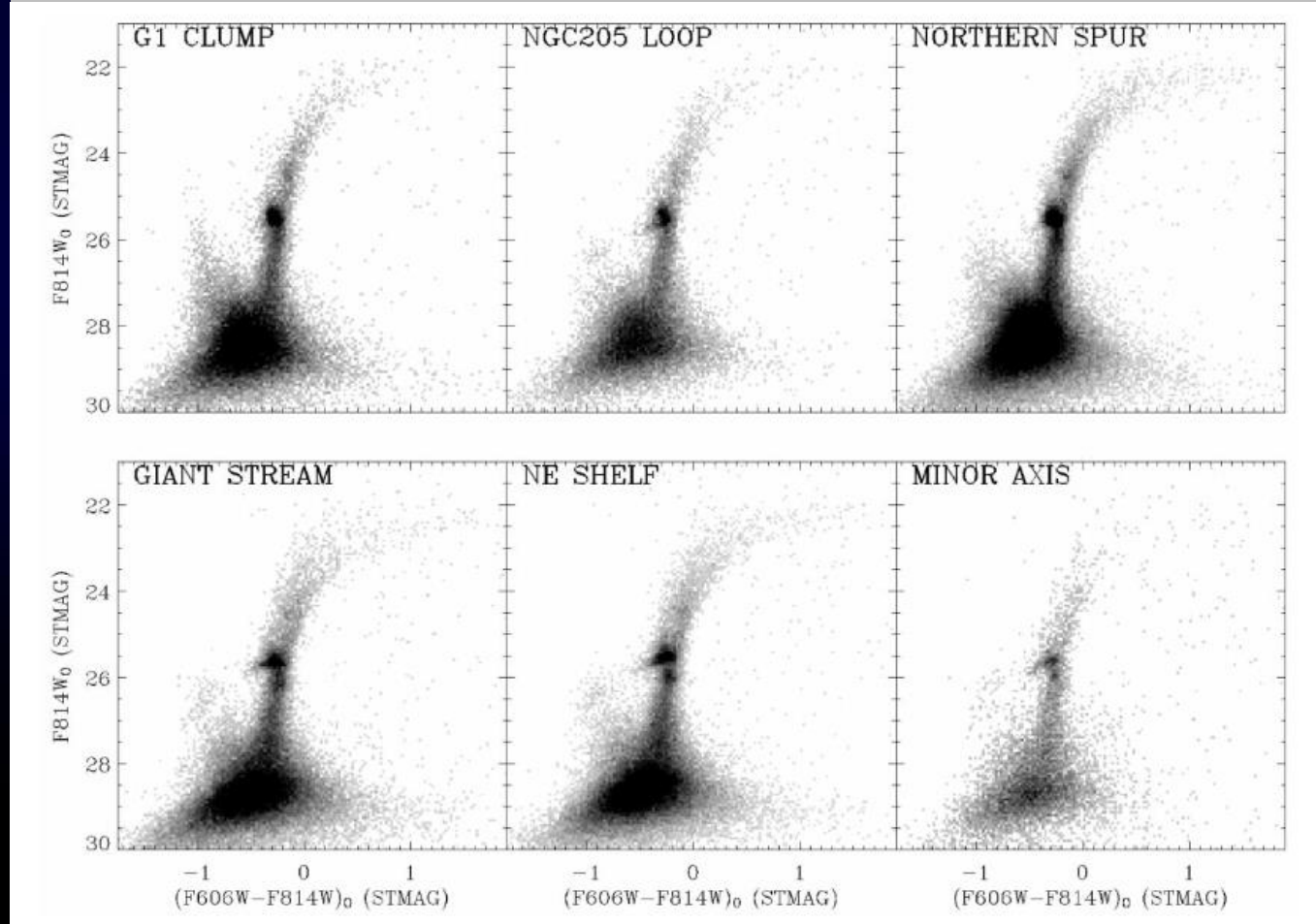
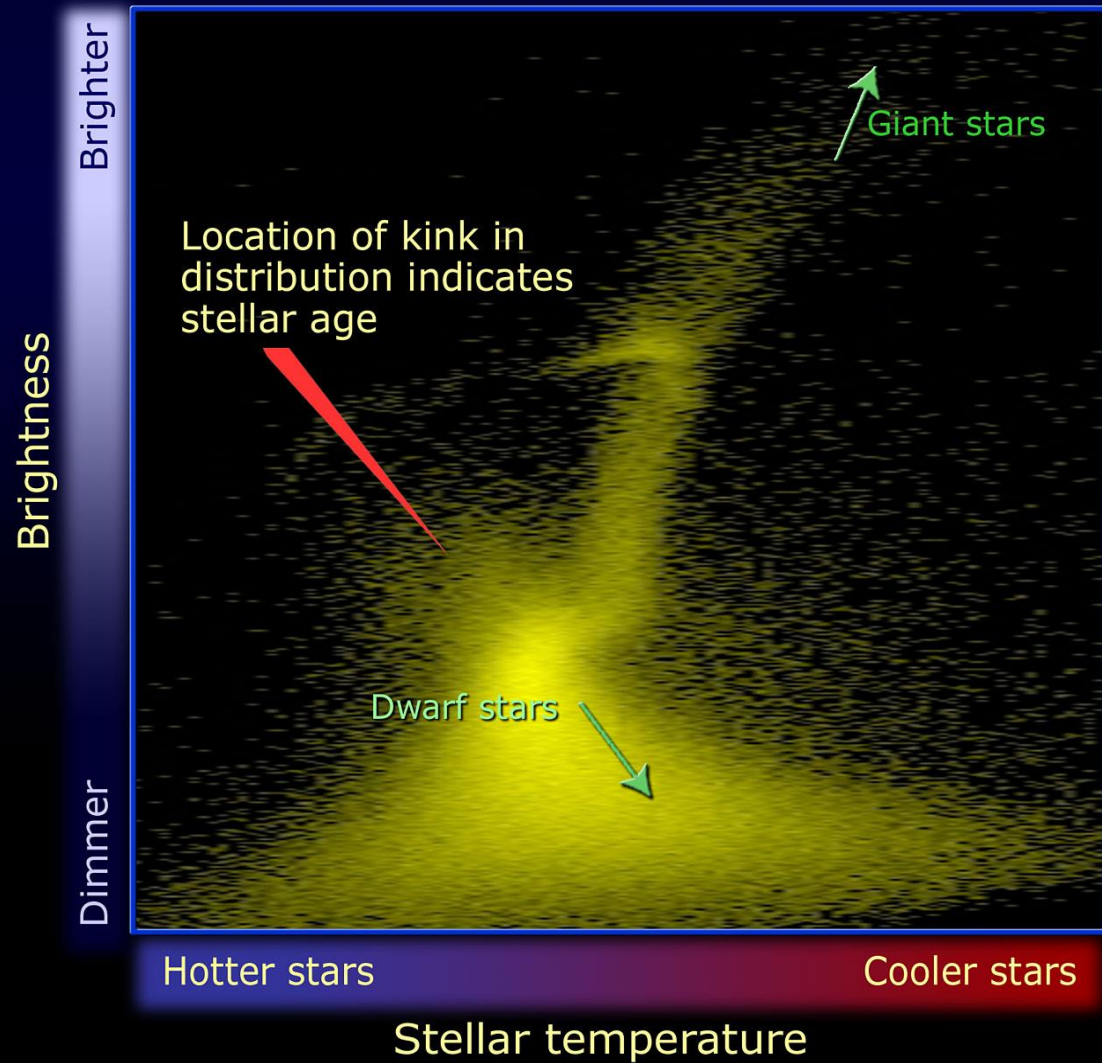
RP: 640–1050 nm



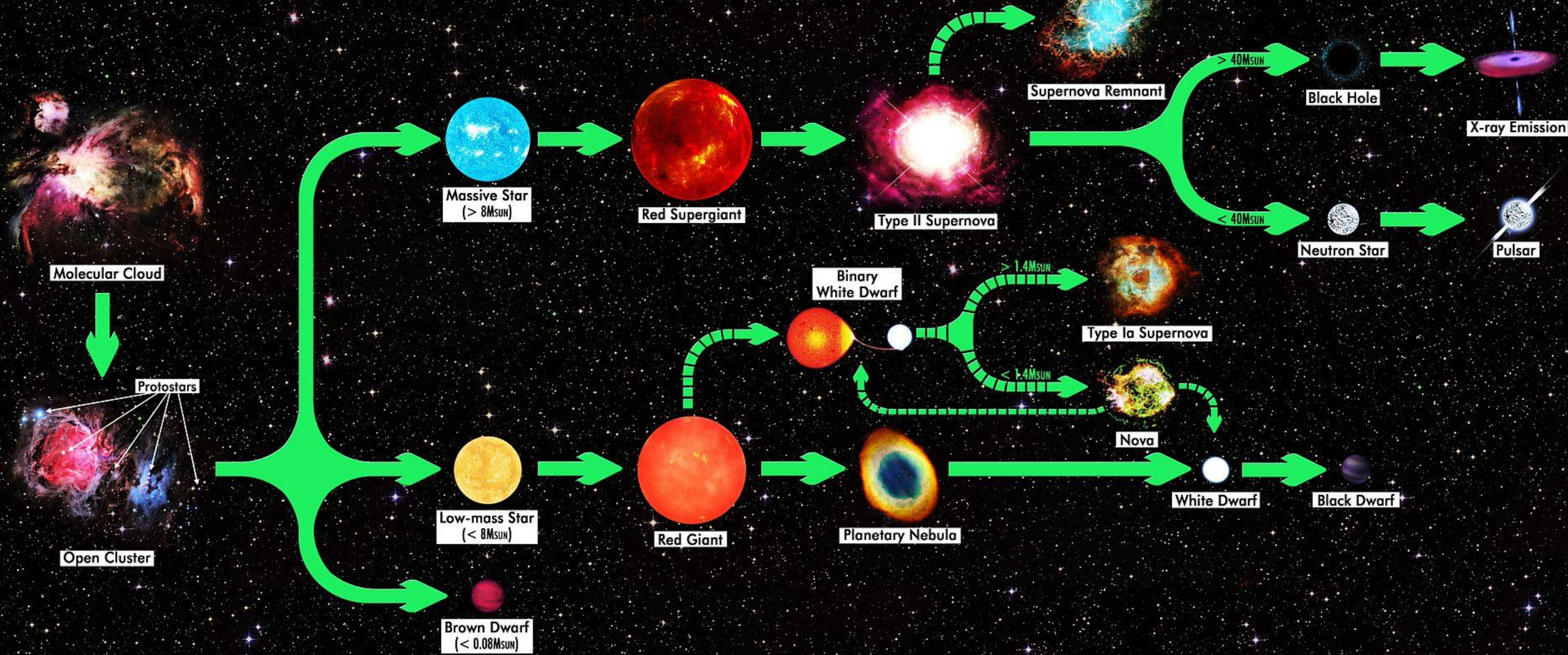


Hubble Space Telescope helps scientists track stellar population in M31 halo

Stars in M31 halo have a wider age range (6–13 billion years) than those in the Milky Way halo (11–13 billion years).



STELLAR LIFE CYCLE



Birth

Main Sequence

Old Age

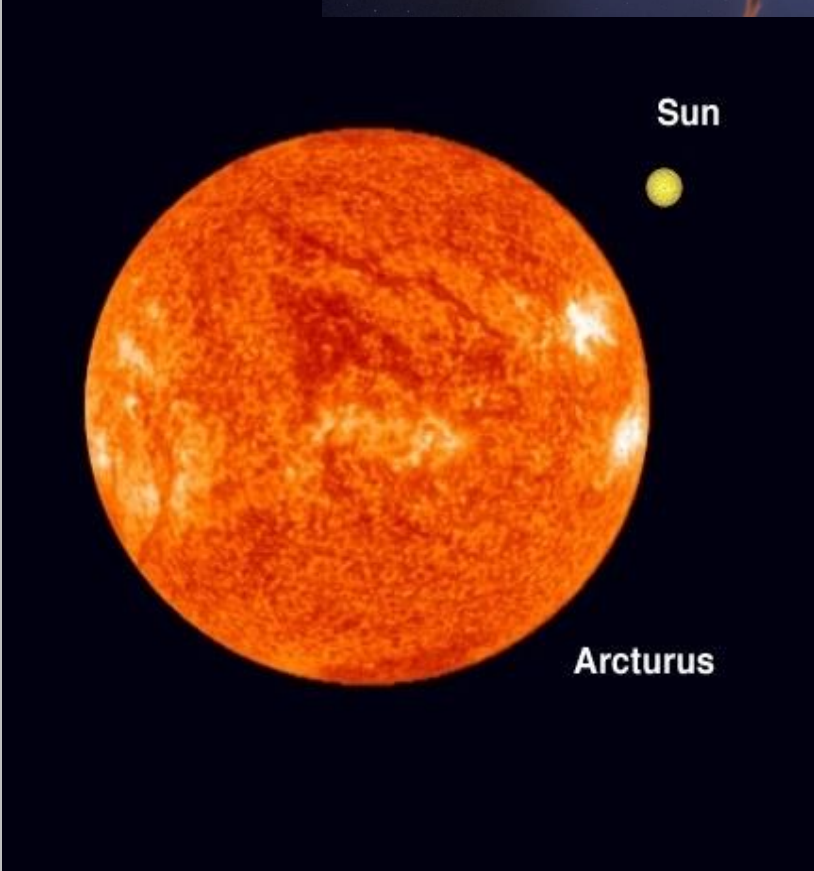
Death

Remnant



De zon

- Ster met een gemiddelde lichtkracht
- Gemiddelde temperatuur
- Hoofdreeksster
- Waterstof fusie tot Helium
- Eindigt als witte dwerg met tussenfase reuzenster





Bedankt

