

A dense field of stars, likely a star cluster or galaxy core, with a faint outline of a constellation (possibly Orion) visible in the background. The stars are concentrated in the center and become sparser towards the edges. The colors range from yellow and orange to blue and white.

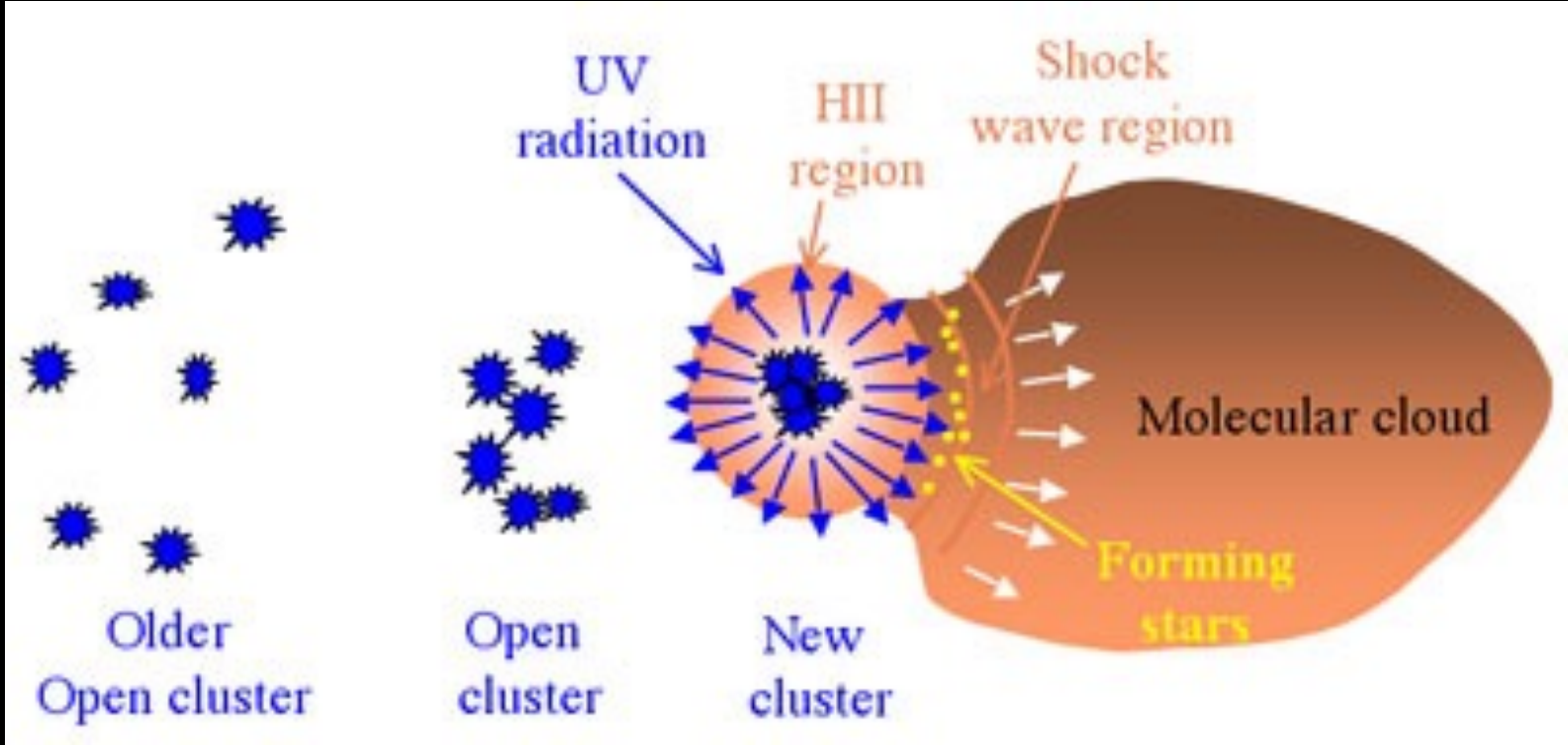
# Structure and Evolution of Stars

Lecture 11







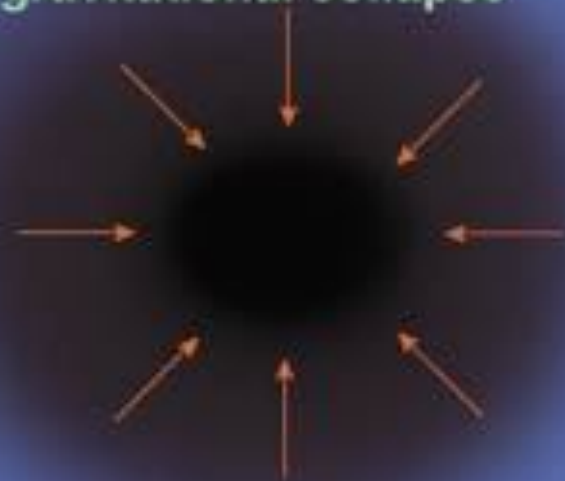


**a dark cloud**

dense core

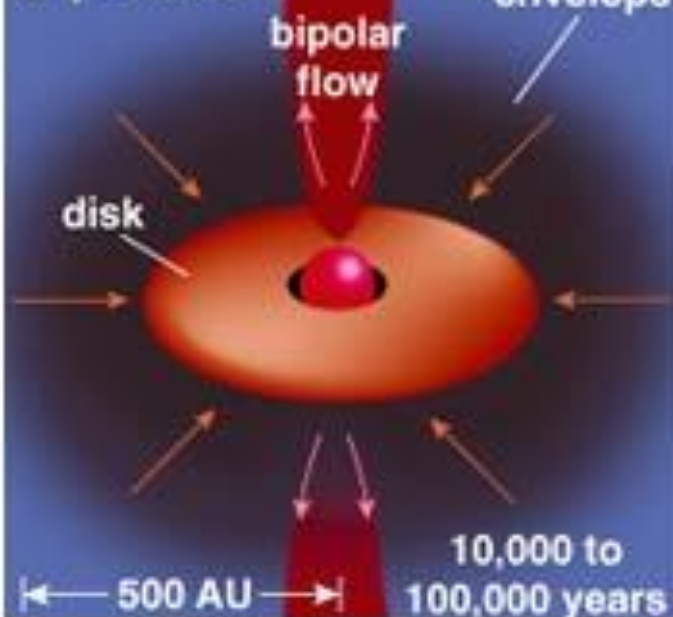
← 200,000 AU →

**b gravitational collapse**



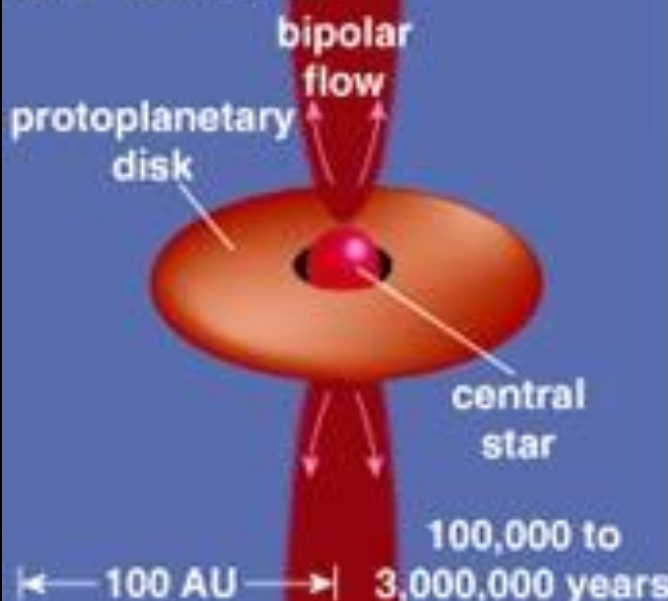
← 10,000 AU → time = 0

**c protostar**



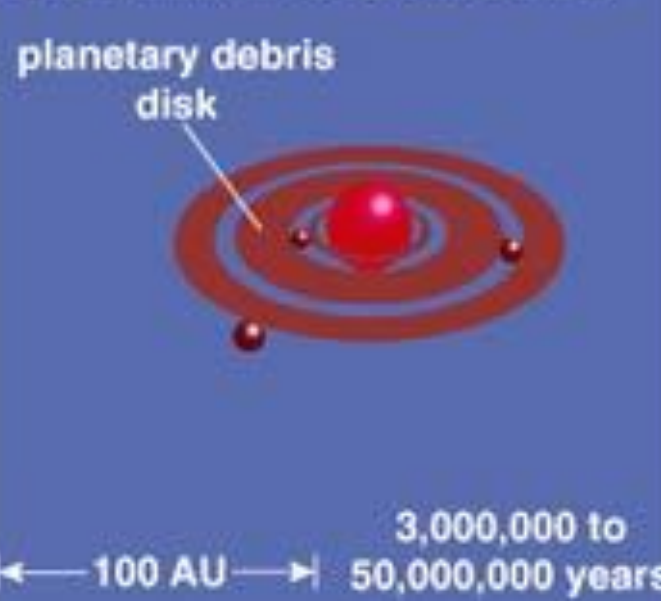
← 500 AU → 10,000 to 100,000 years

**d T Tauri star**



← 100 AU → 100,000 to 3,000,000 years

**e pre-main-sequence star**



← 100 AU → 3,000,000 to 50,000,000 years

**f young stellar system**



← 50 AU → after 50,000,000 years



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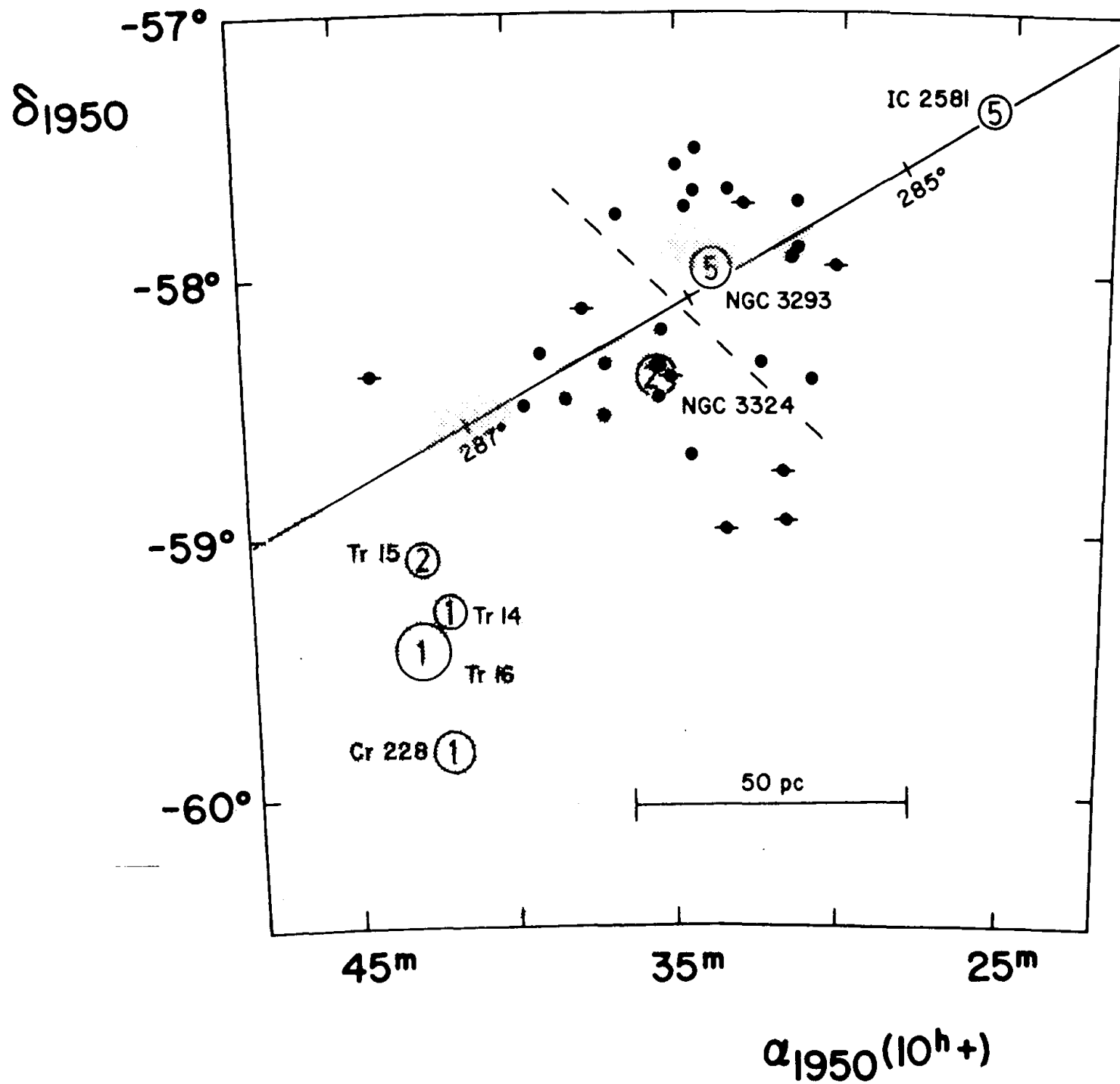


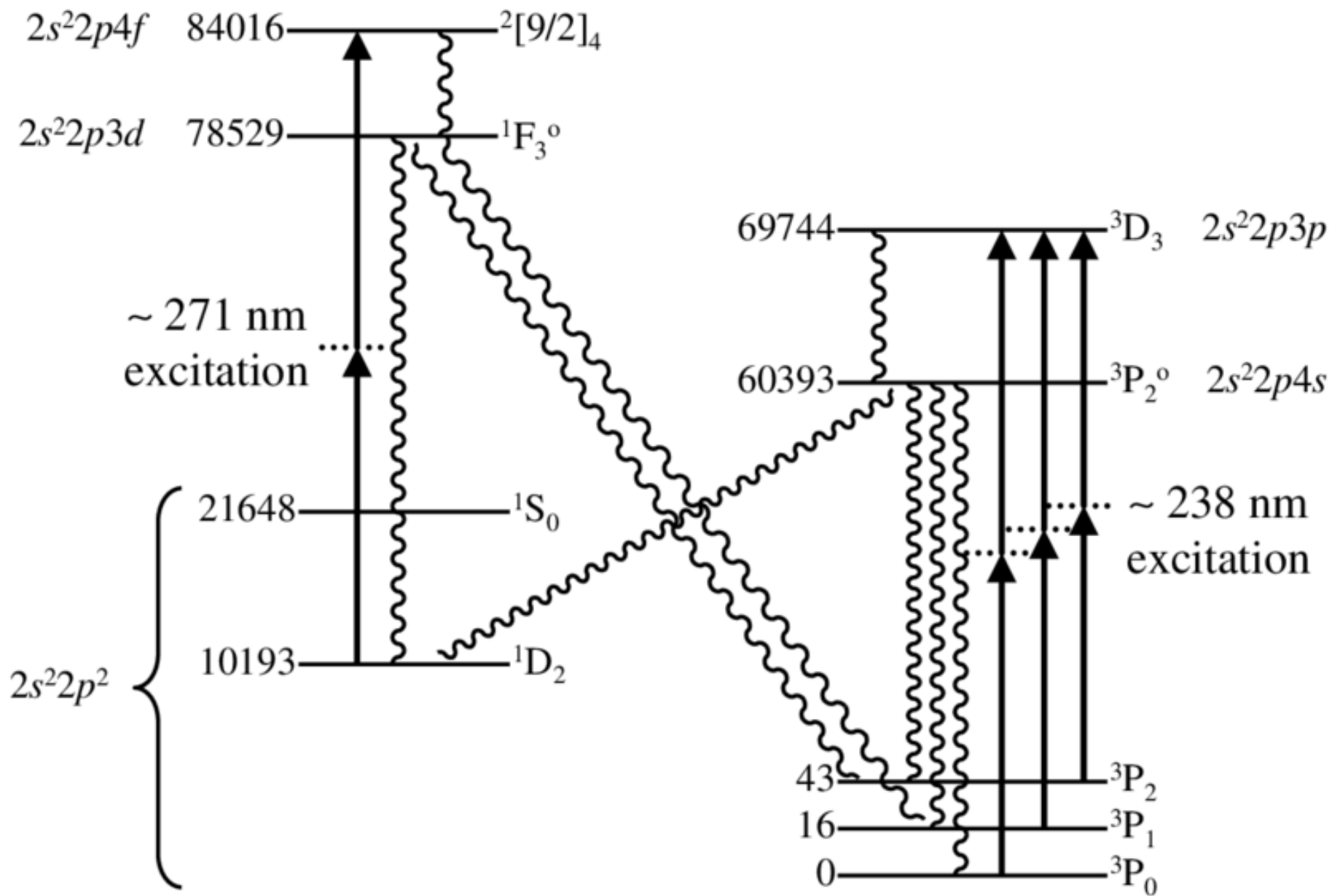


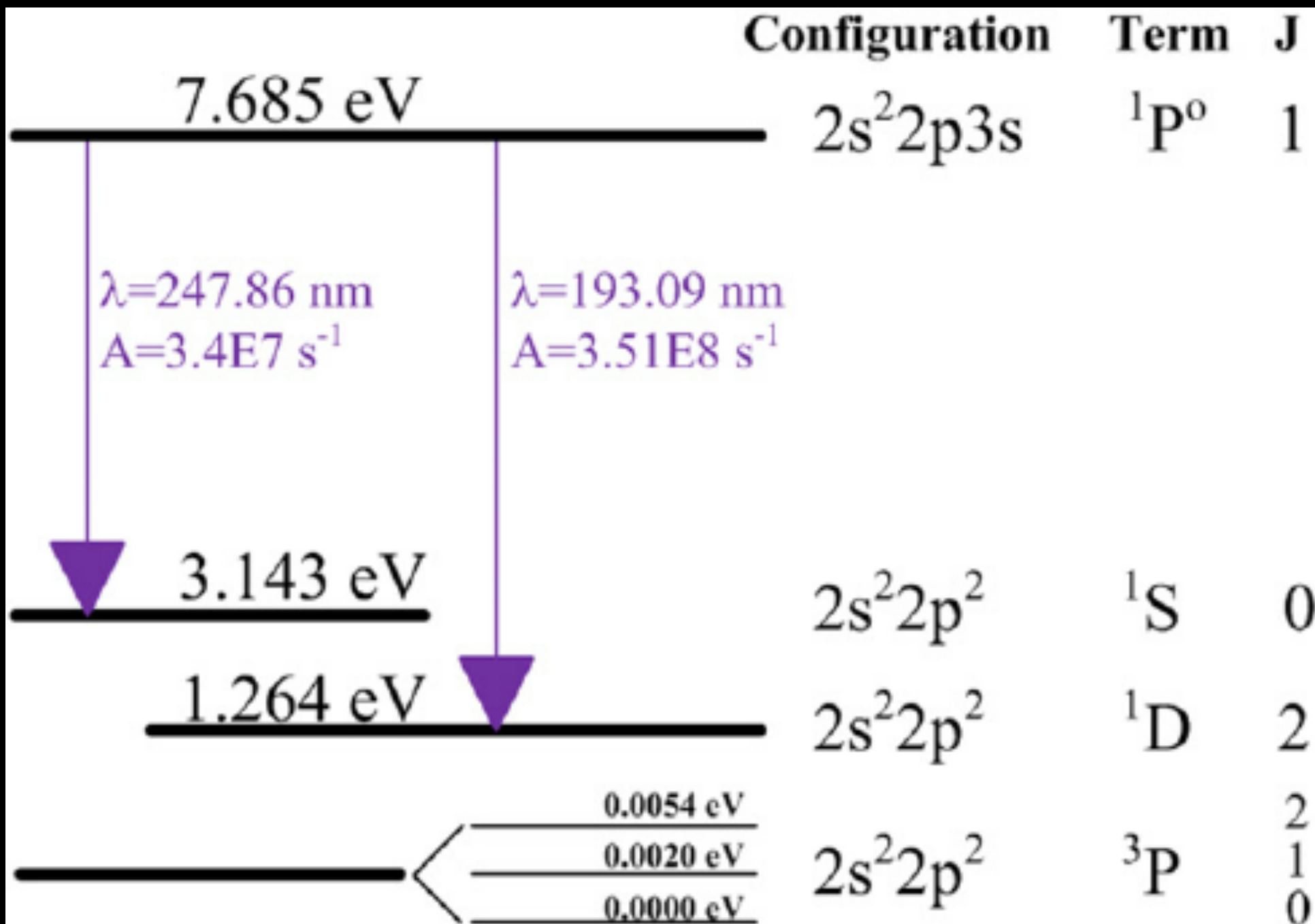


ESA/Hubble & NASA, J. Dalcanton  
Dark Energy Survey/DOE/FNAL/DECam/CTIO/NOIRLab/NSF/AURA,

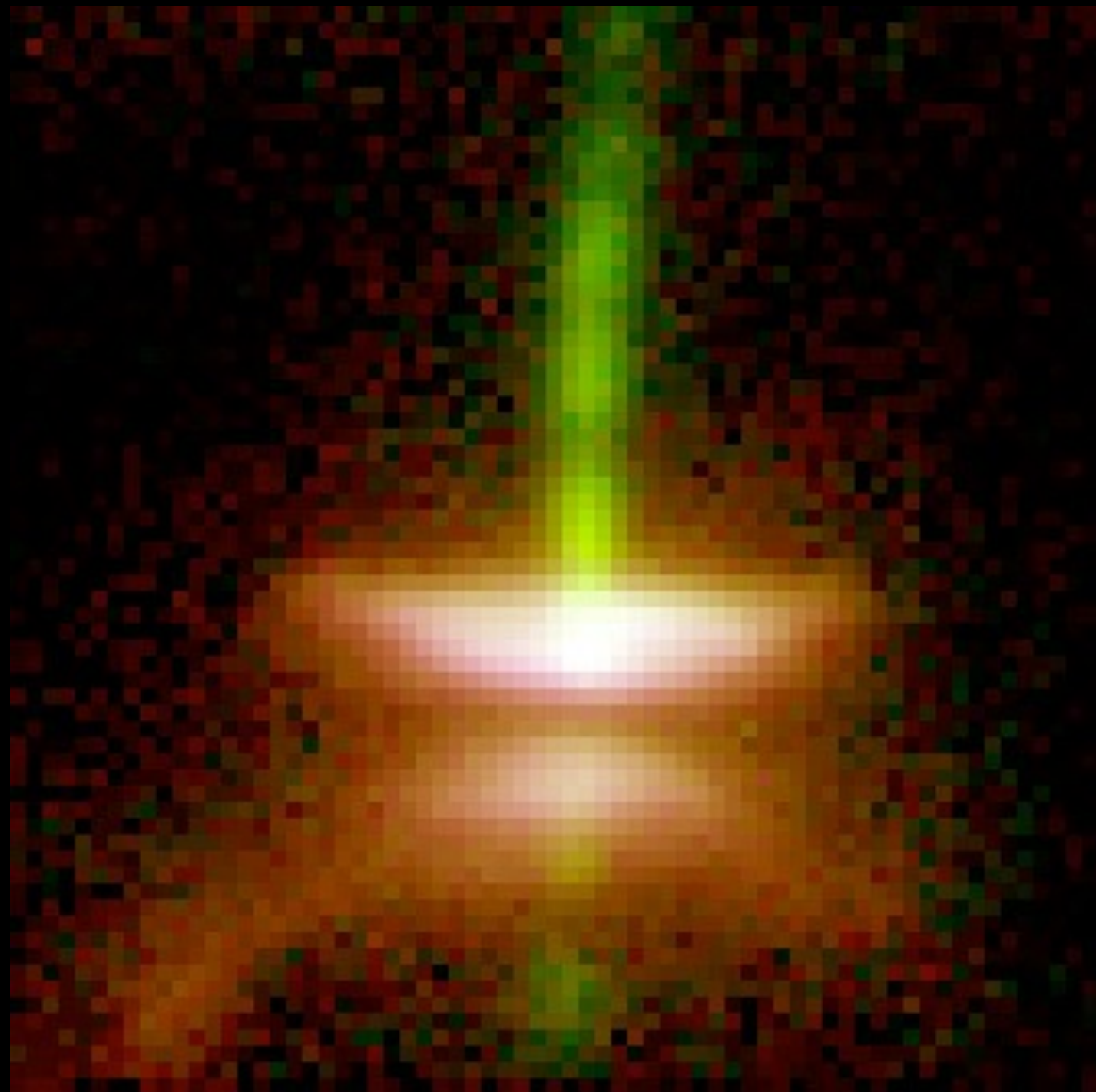


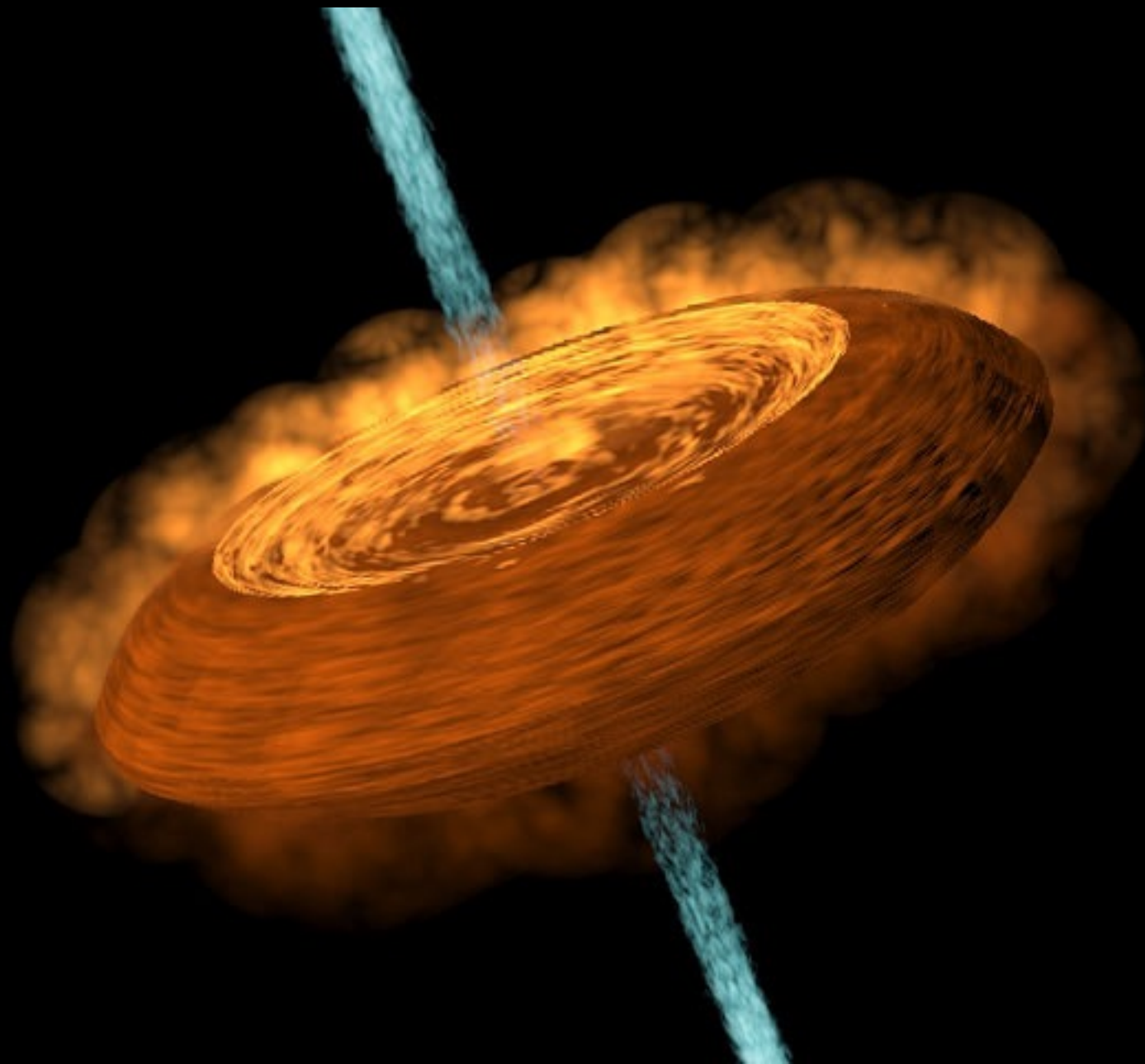














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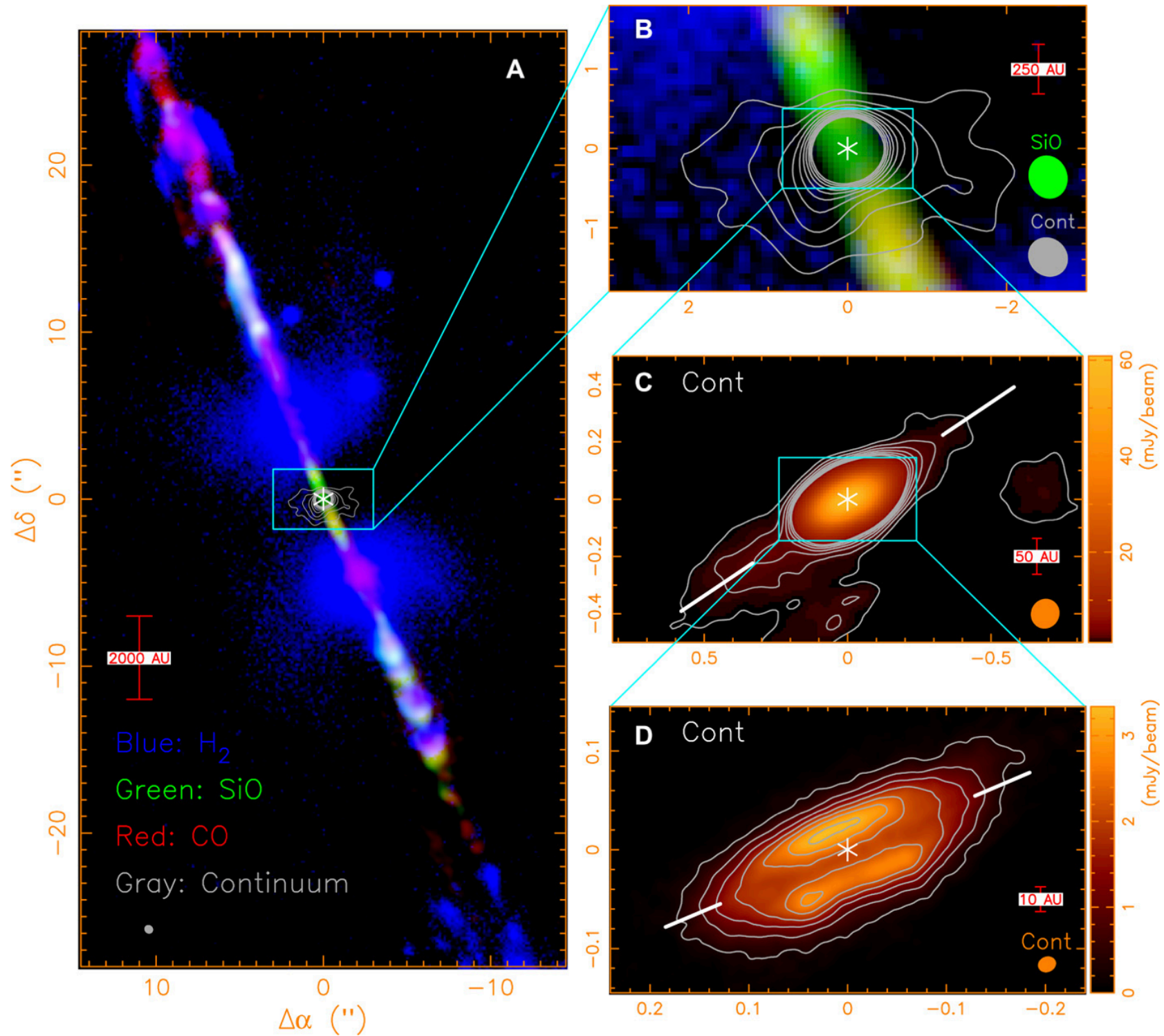
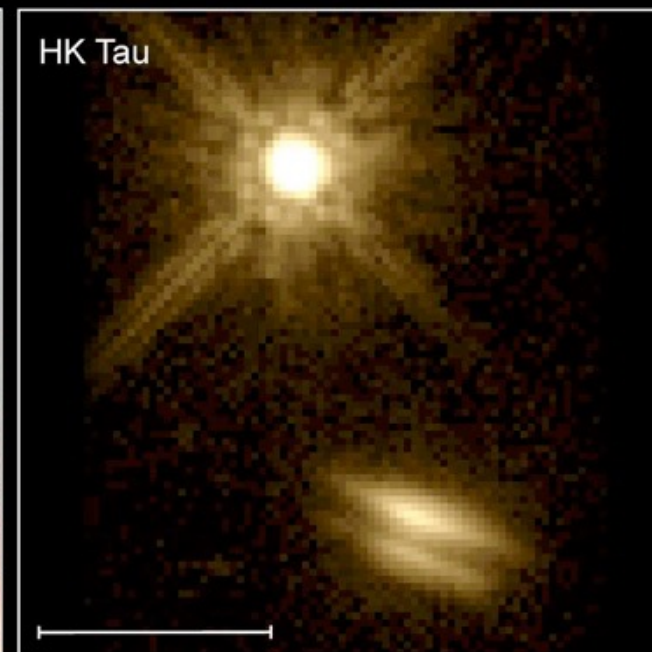
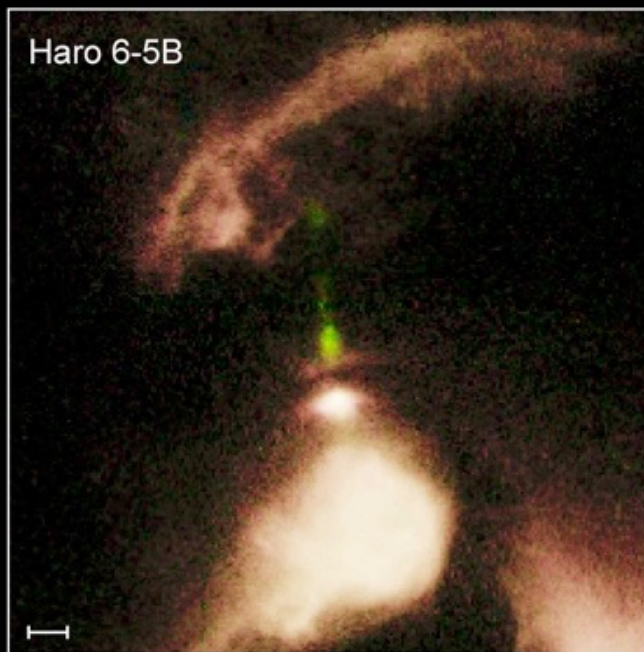
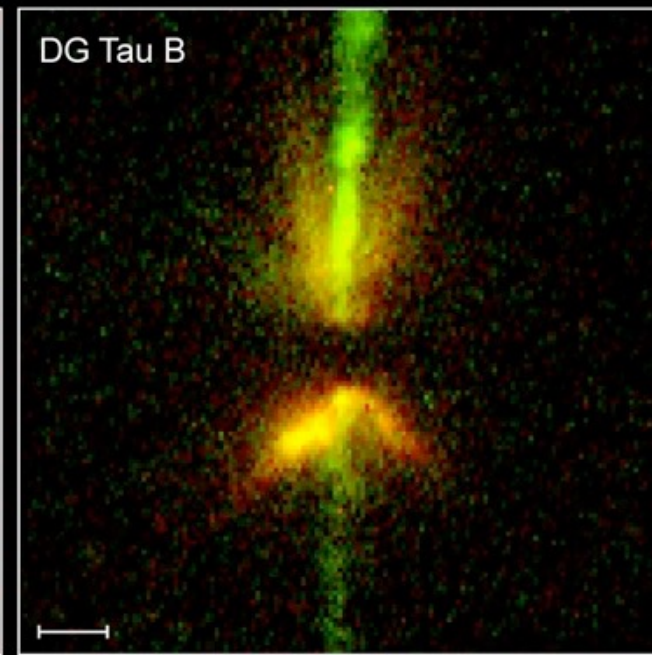
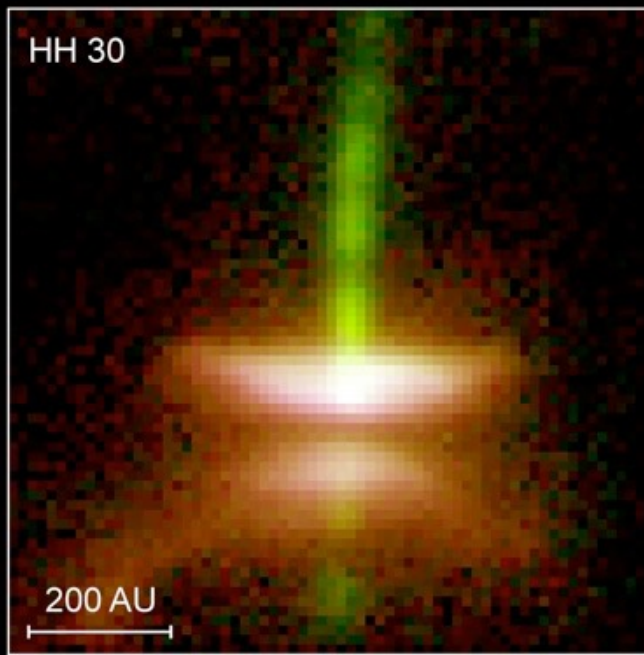
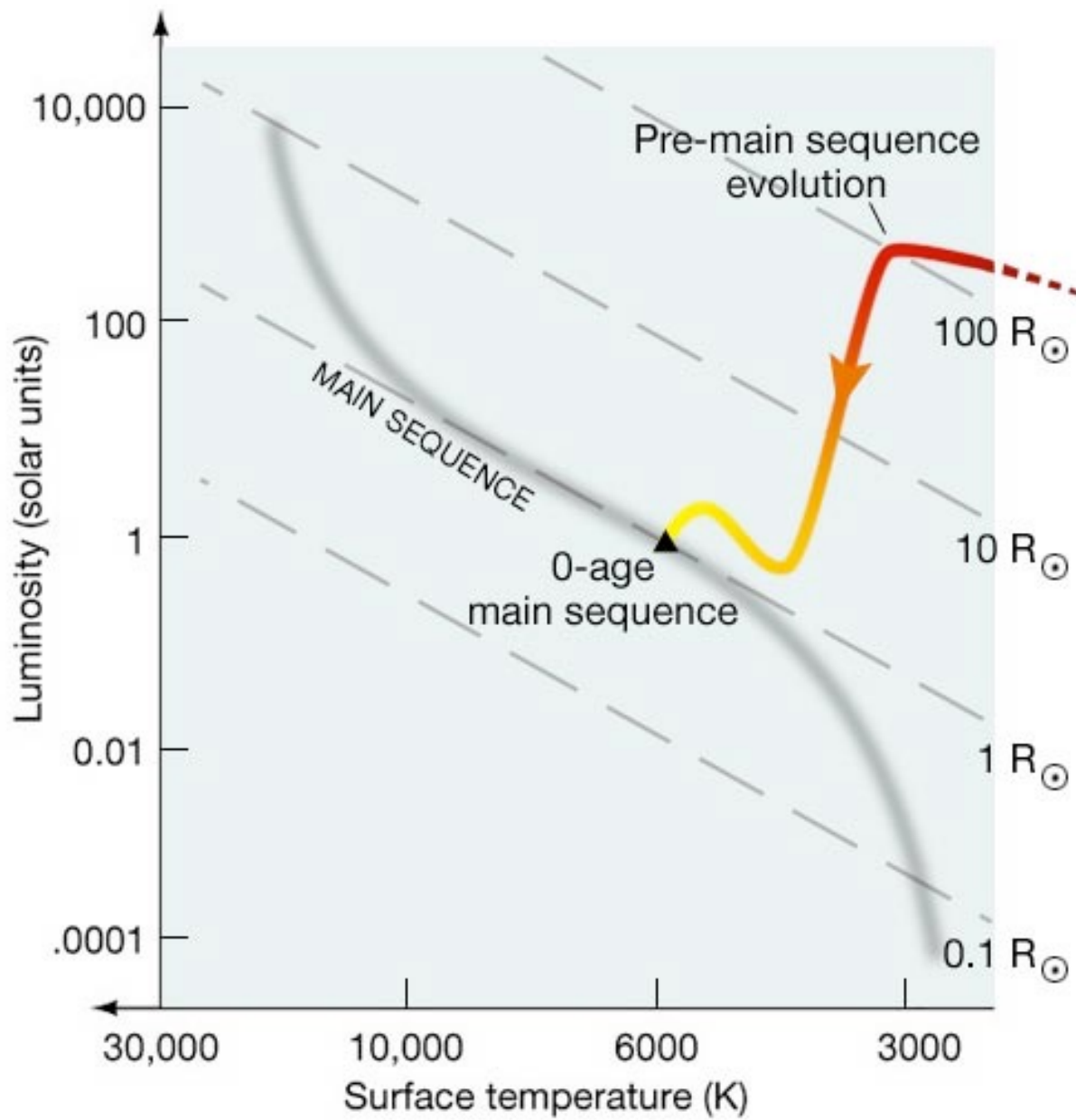


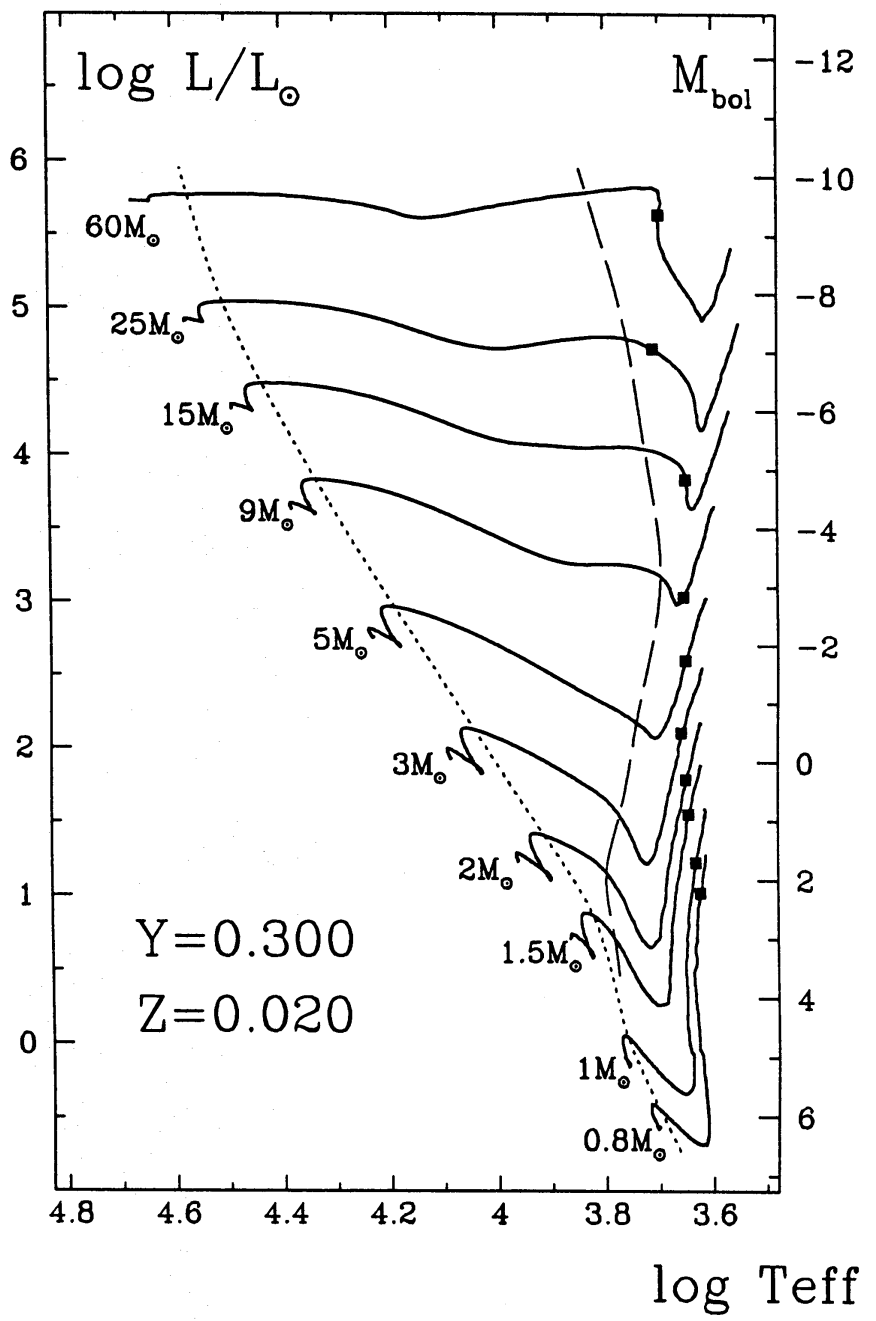
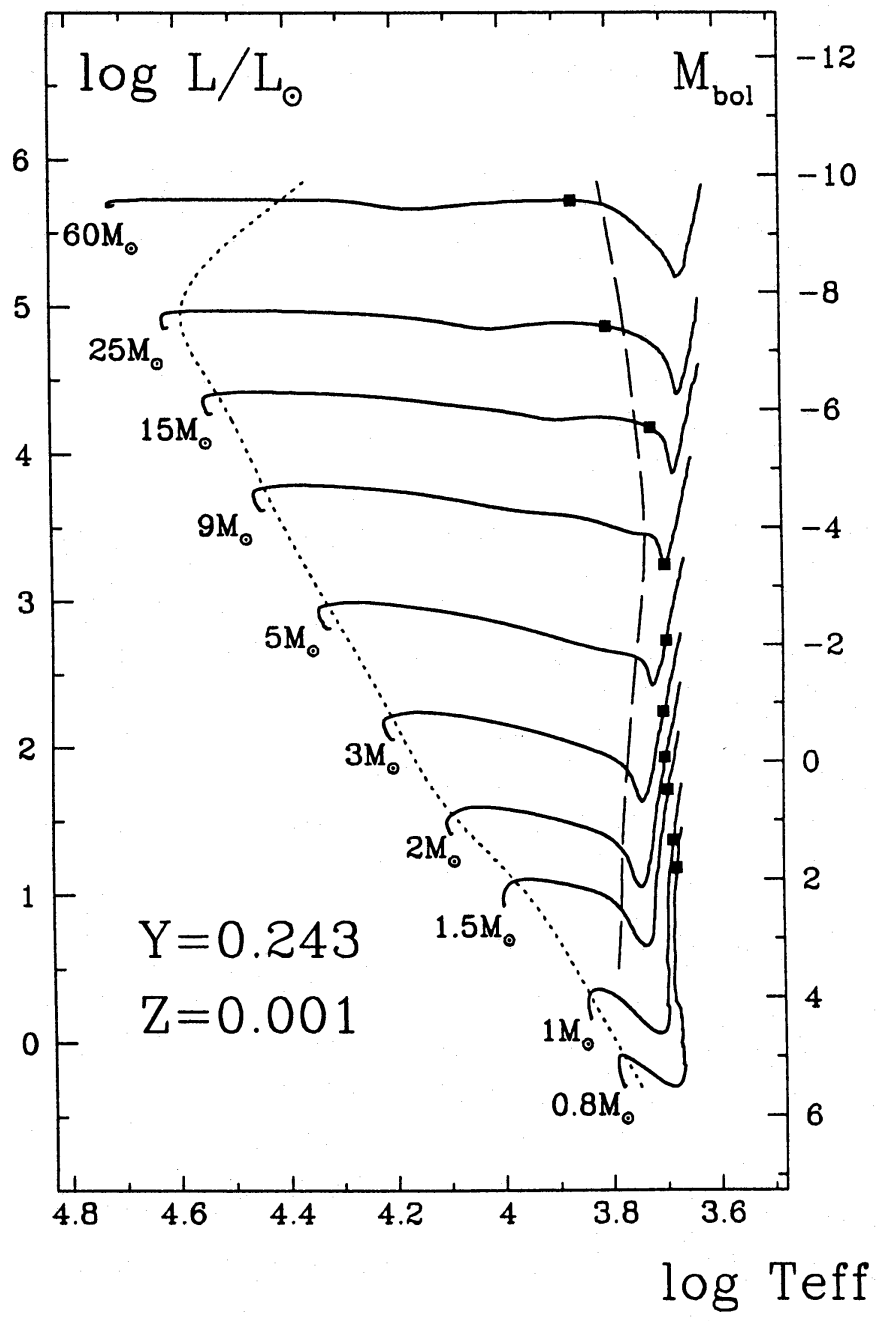
Fig. 1 ALMA maps of the jet, envelope, and disk in the HH 212 system.

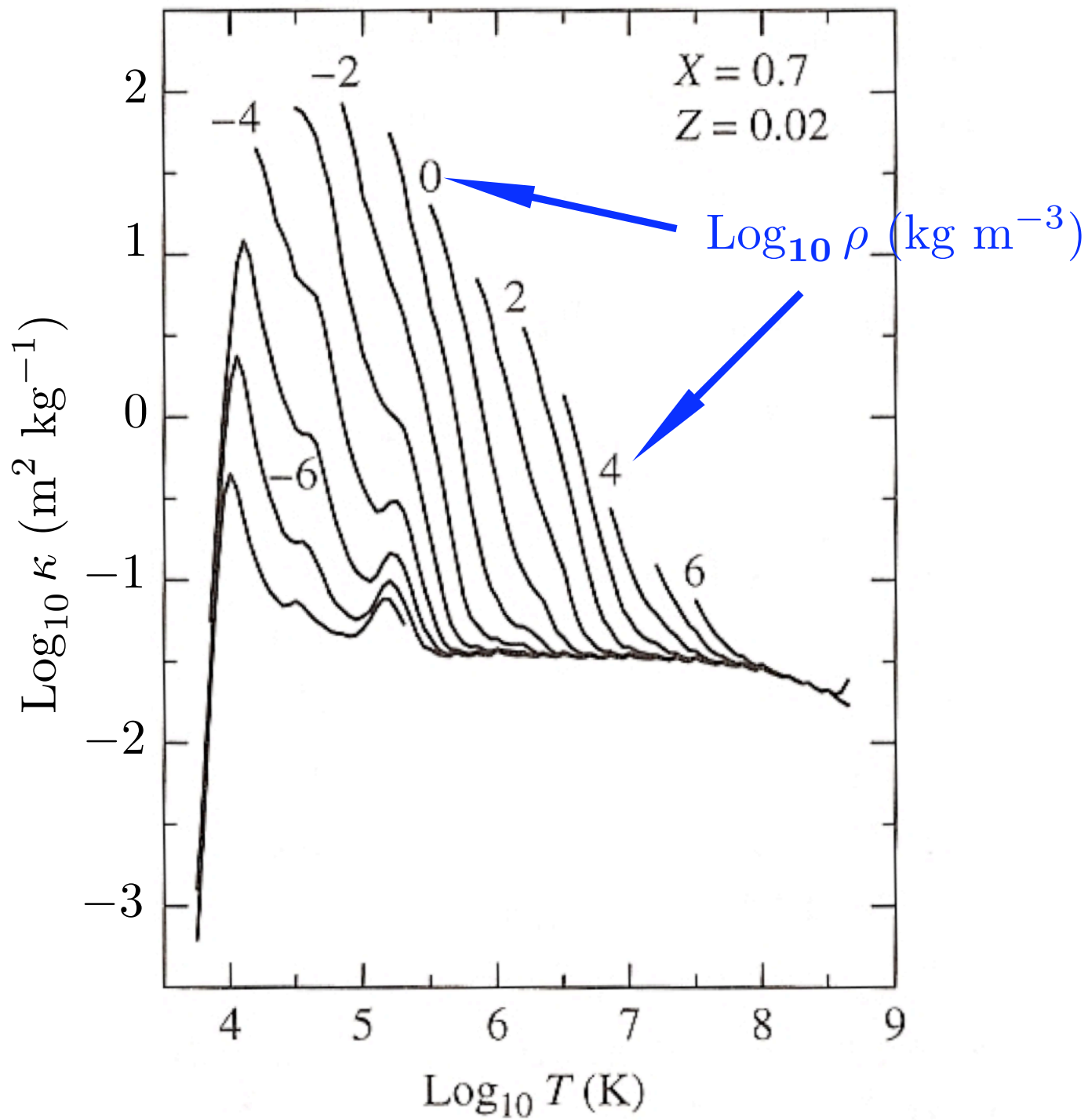




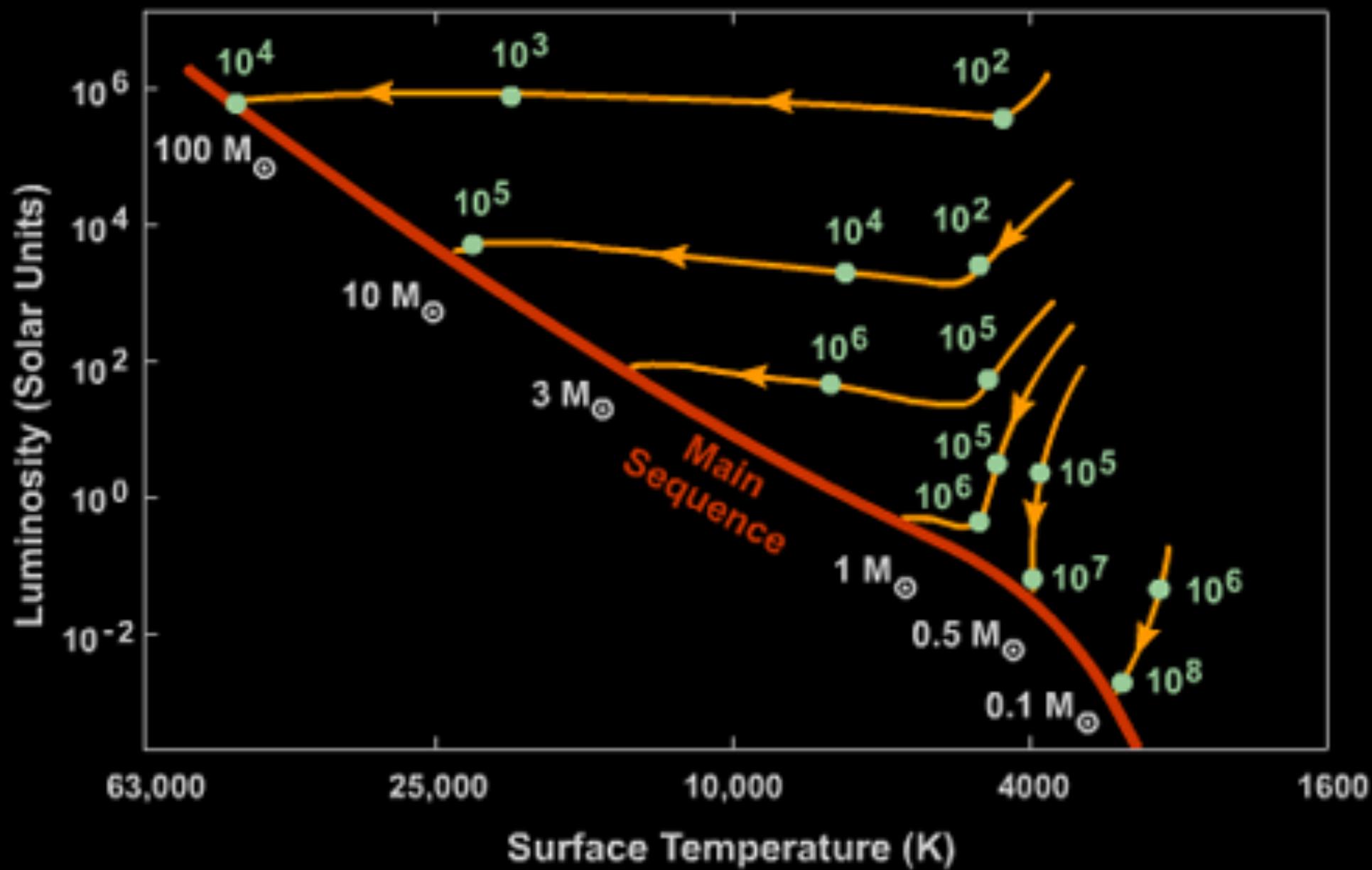
**Disks around Young Stars**  
Hubble Space Telescope • WFPC2

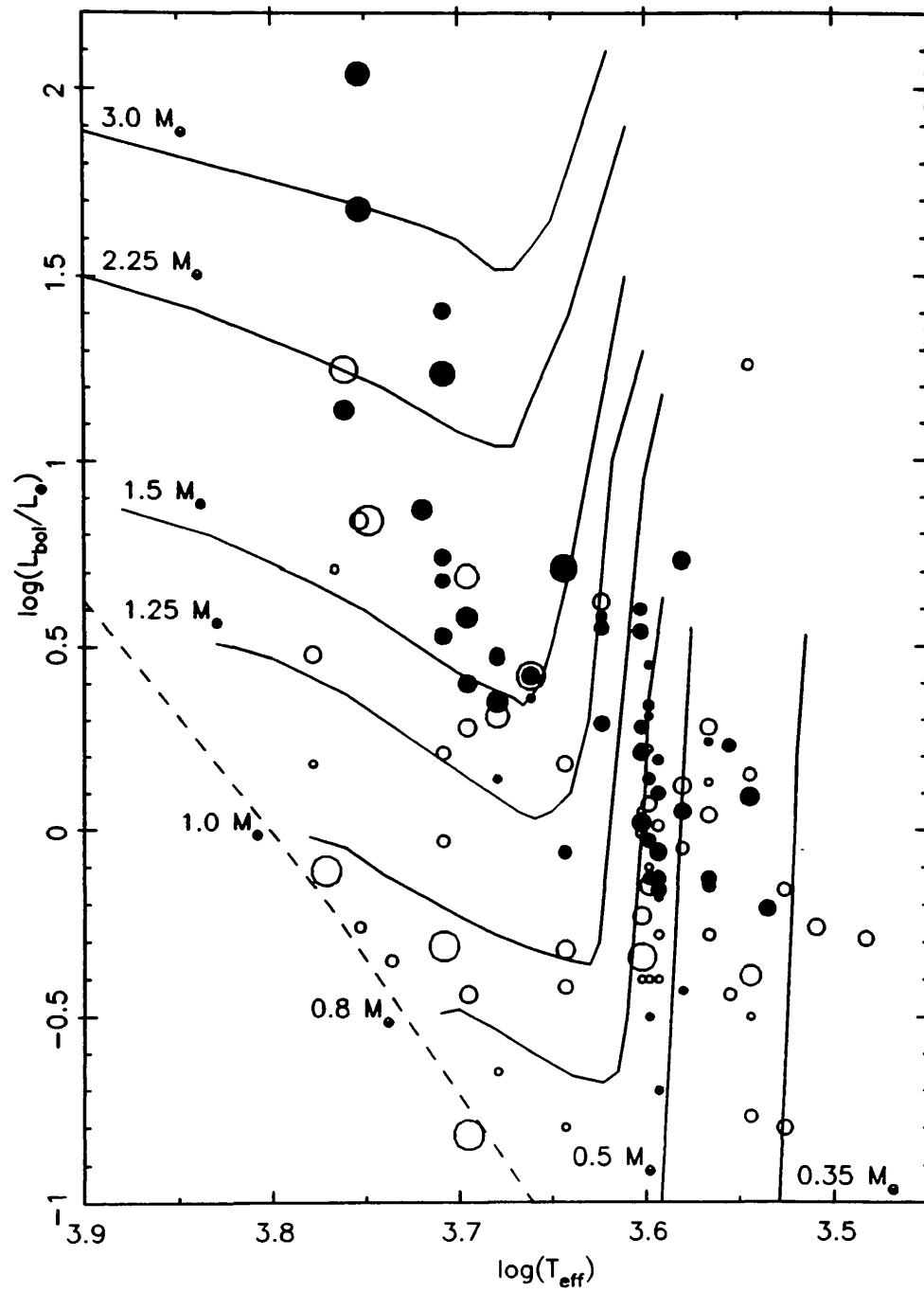


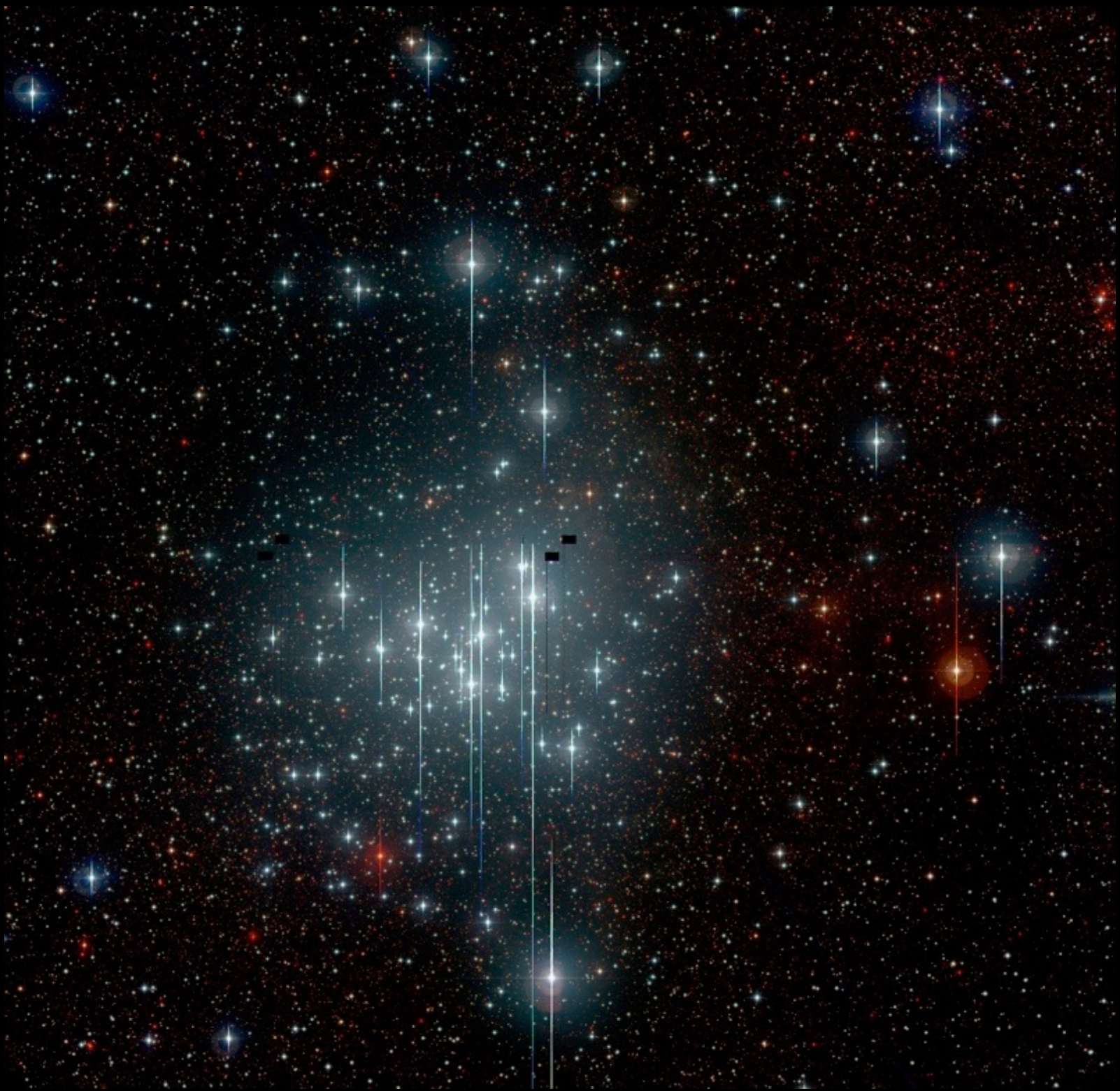


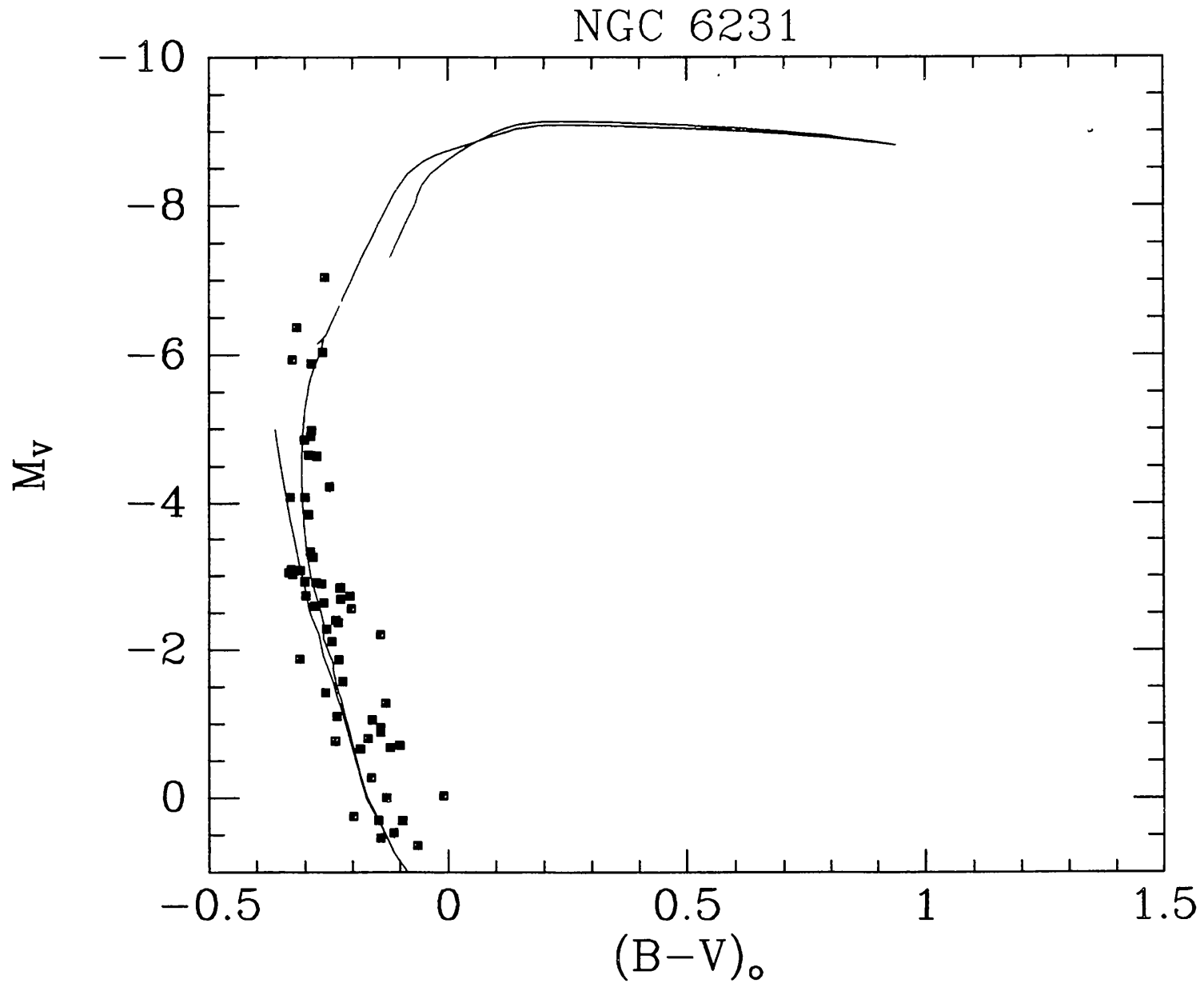












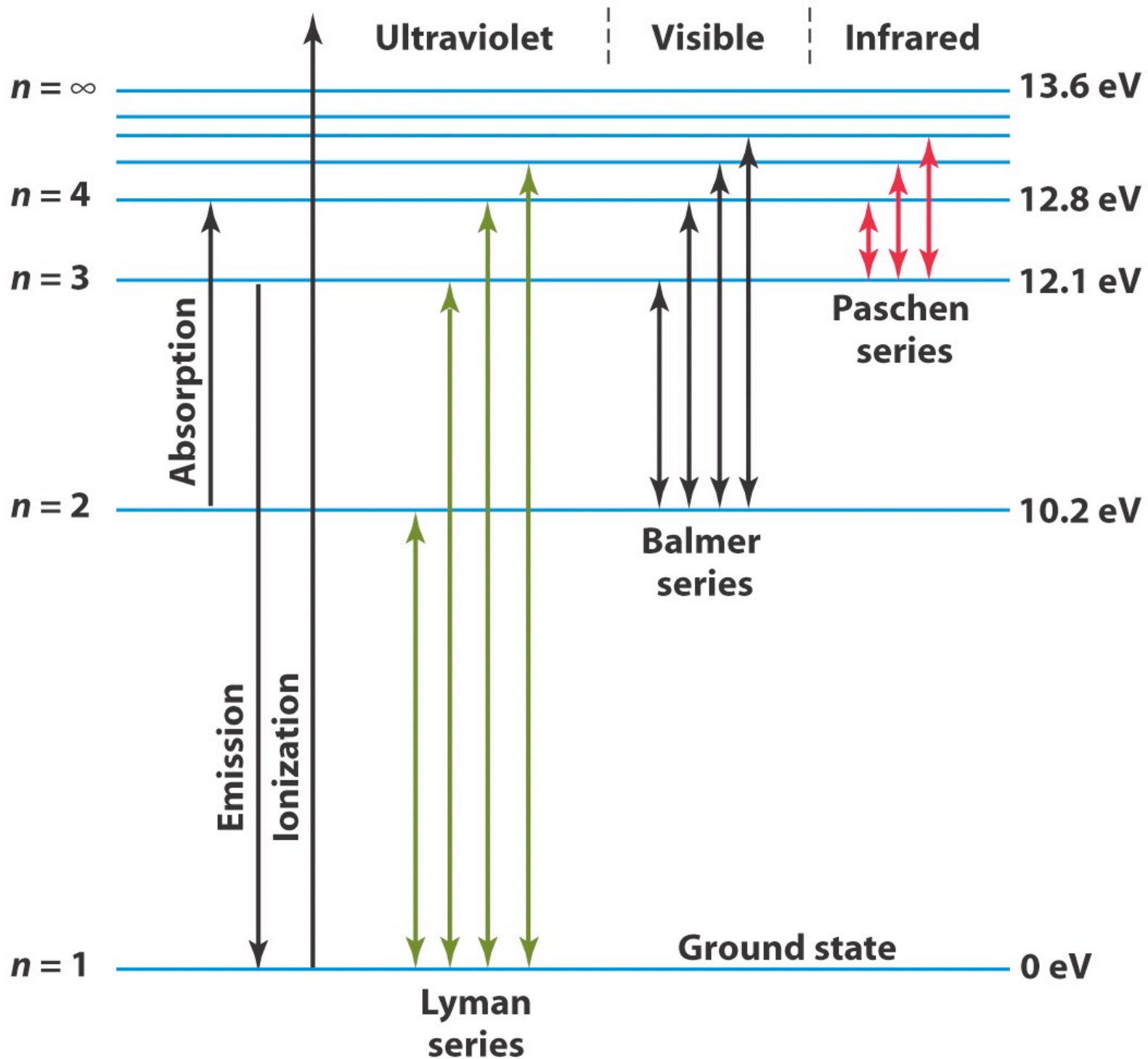
**Fig. 10.** Same as in Fig. 9 for NGC 6231,  $m - M = 12.50$ ,  $E(B - V) = 0.46$ ,  $\log \text{age} = 6.75$

Meynet et al. 1998





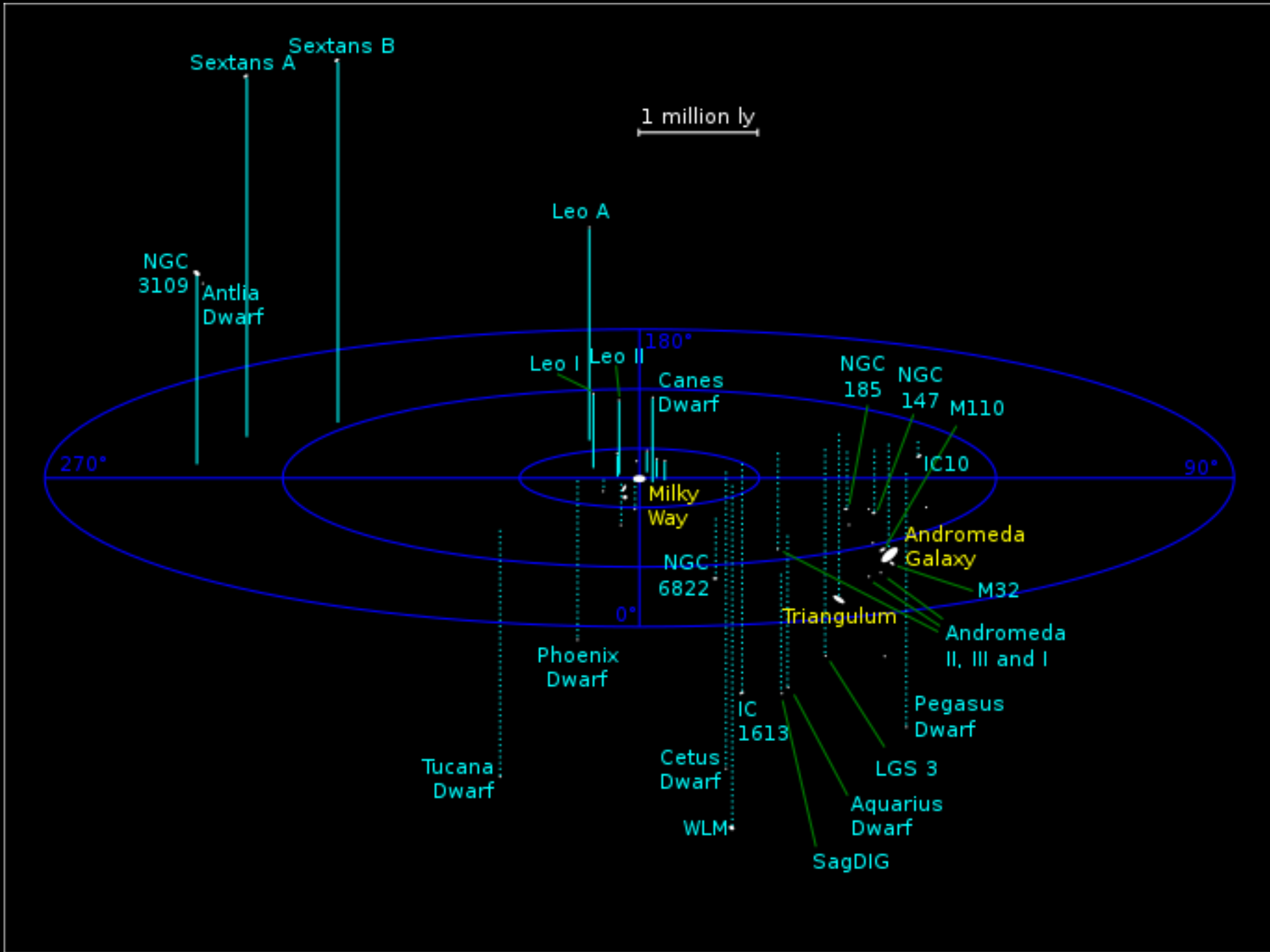


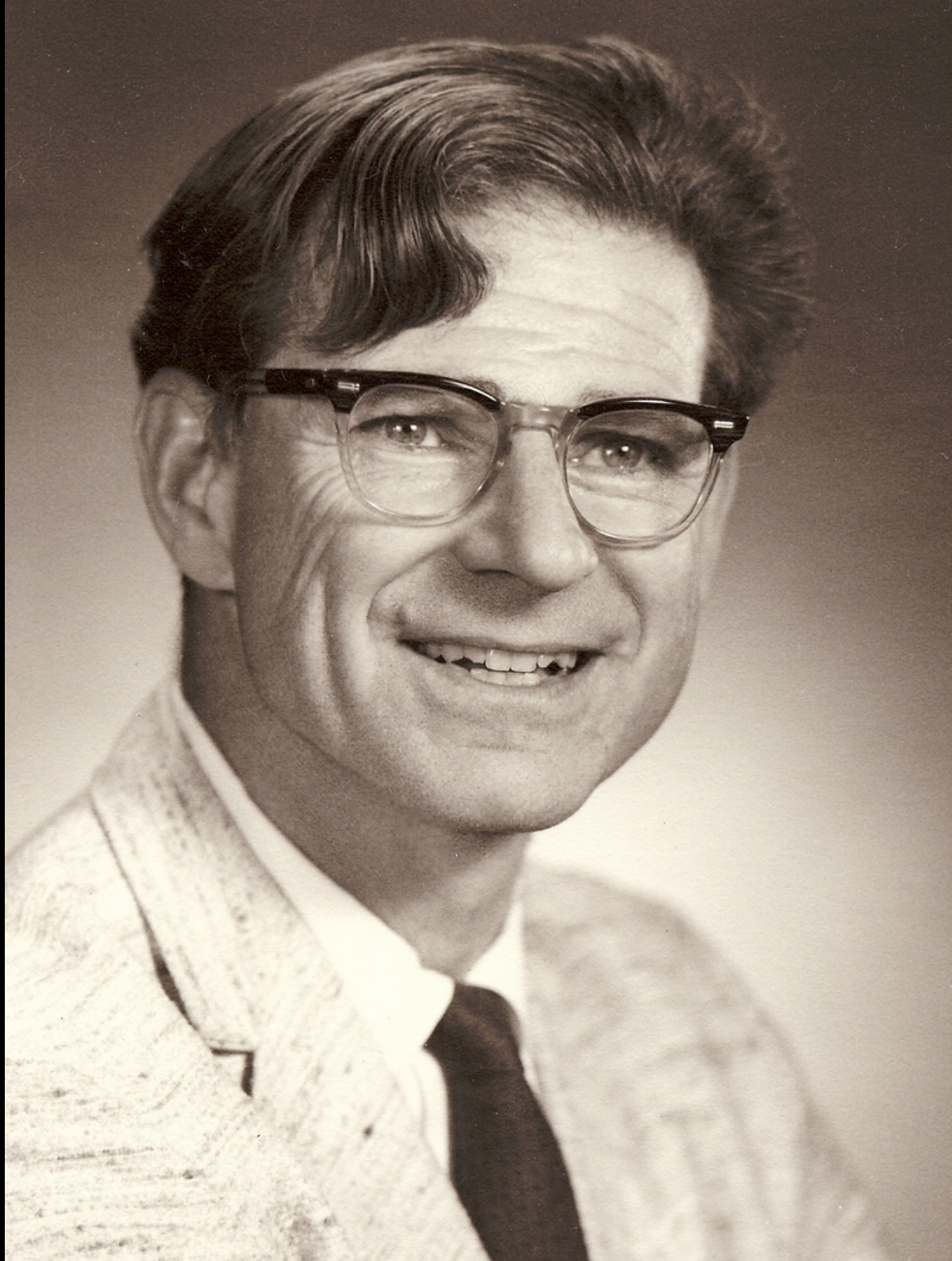


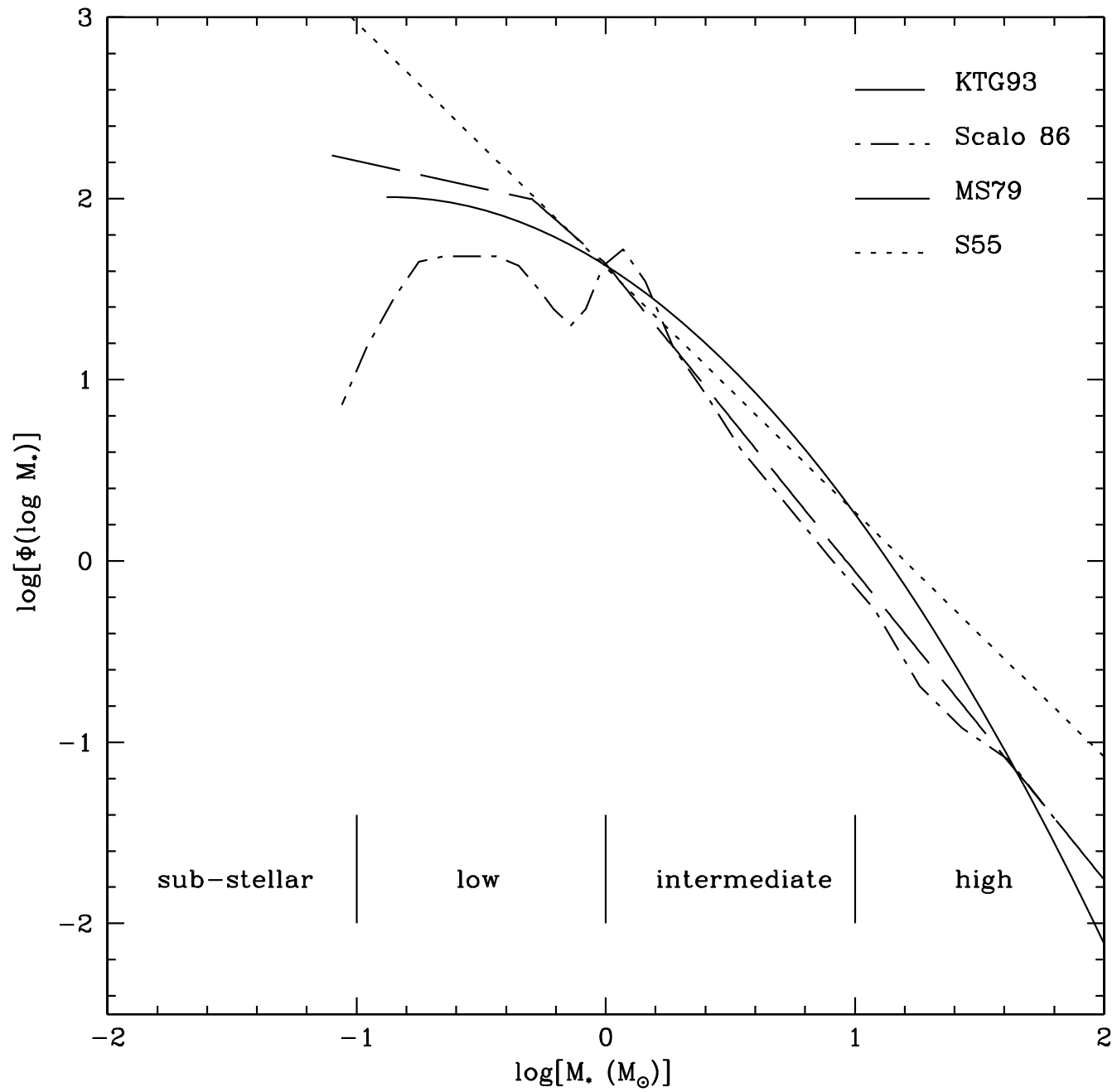


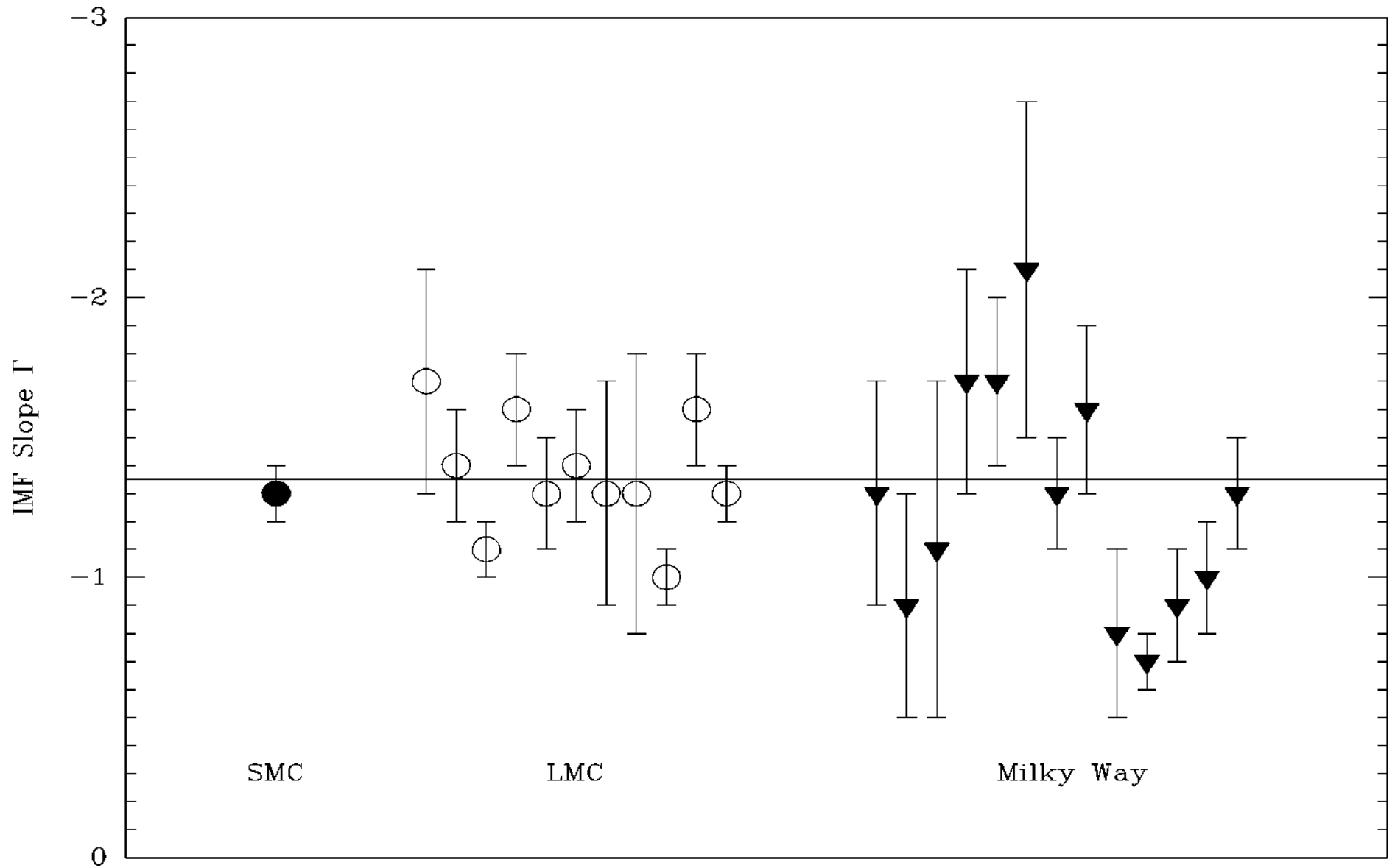












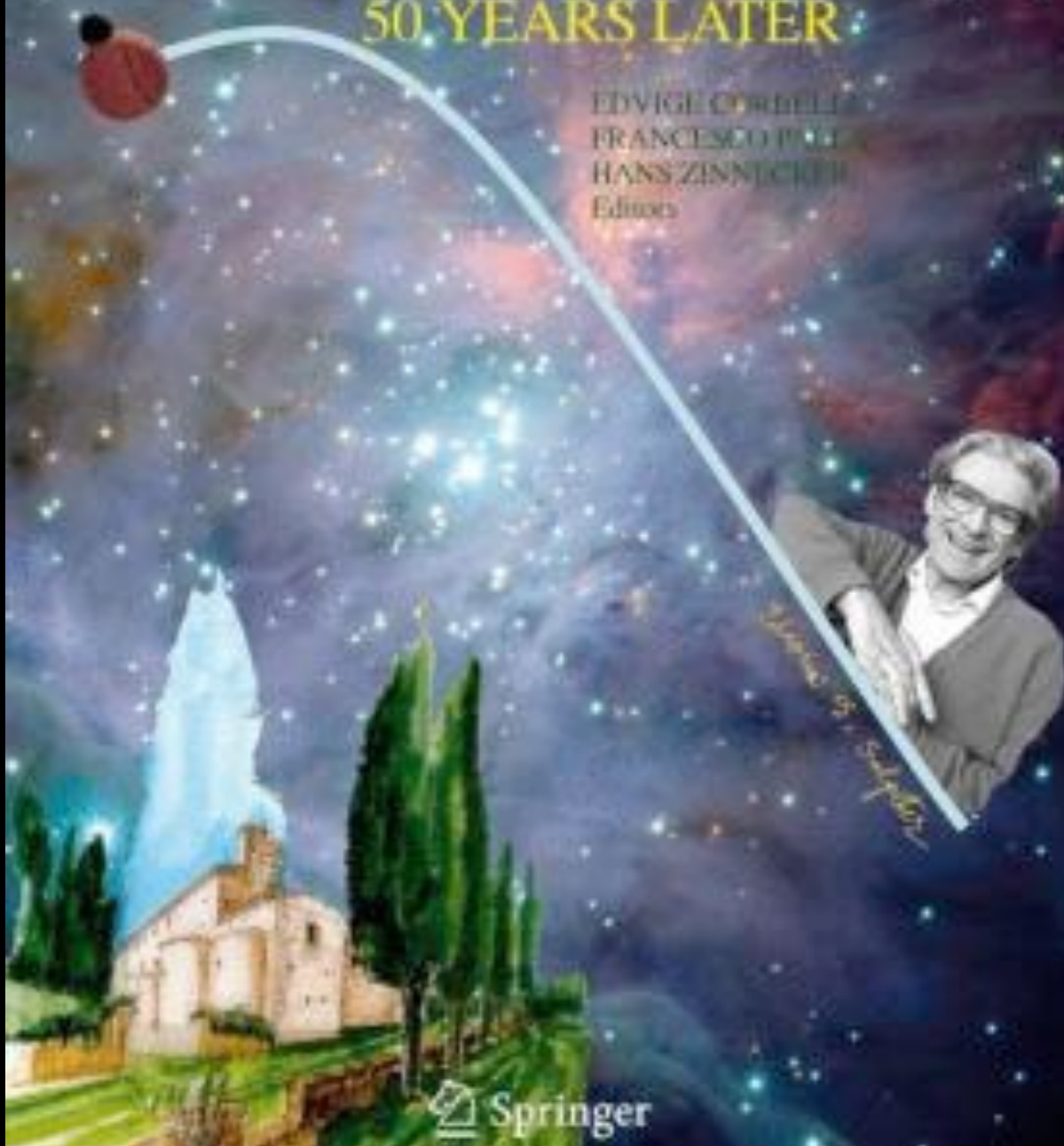
Massey 2003

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