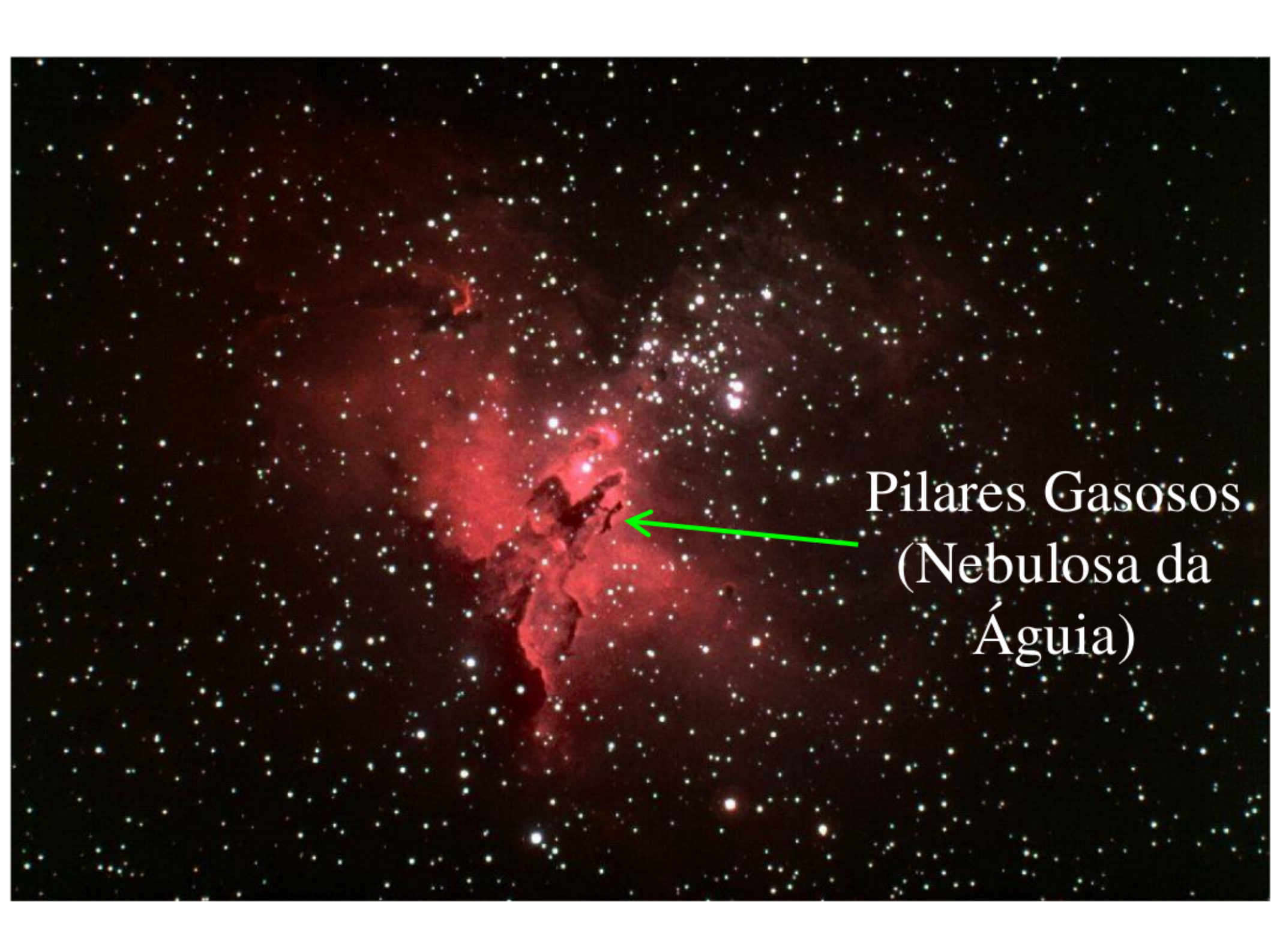


O Sol



Pilares Gasosos
(Nebulosa da
Água)

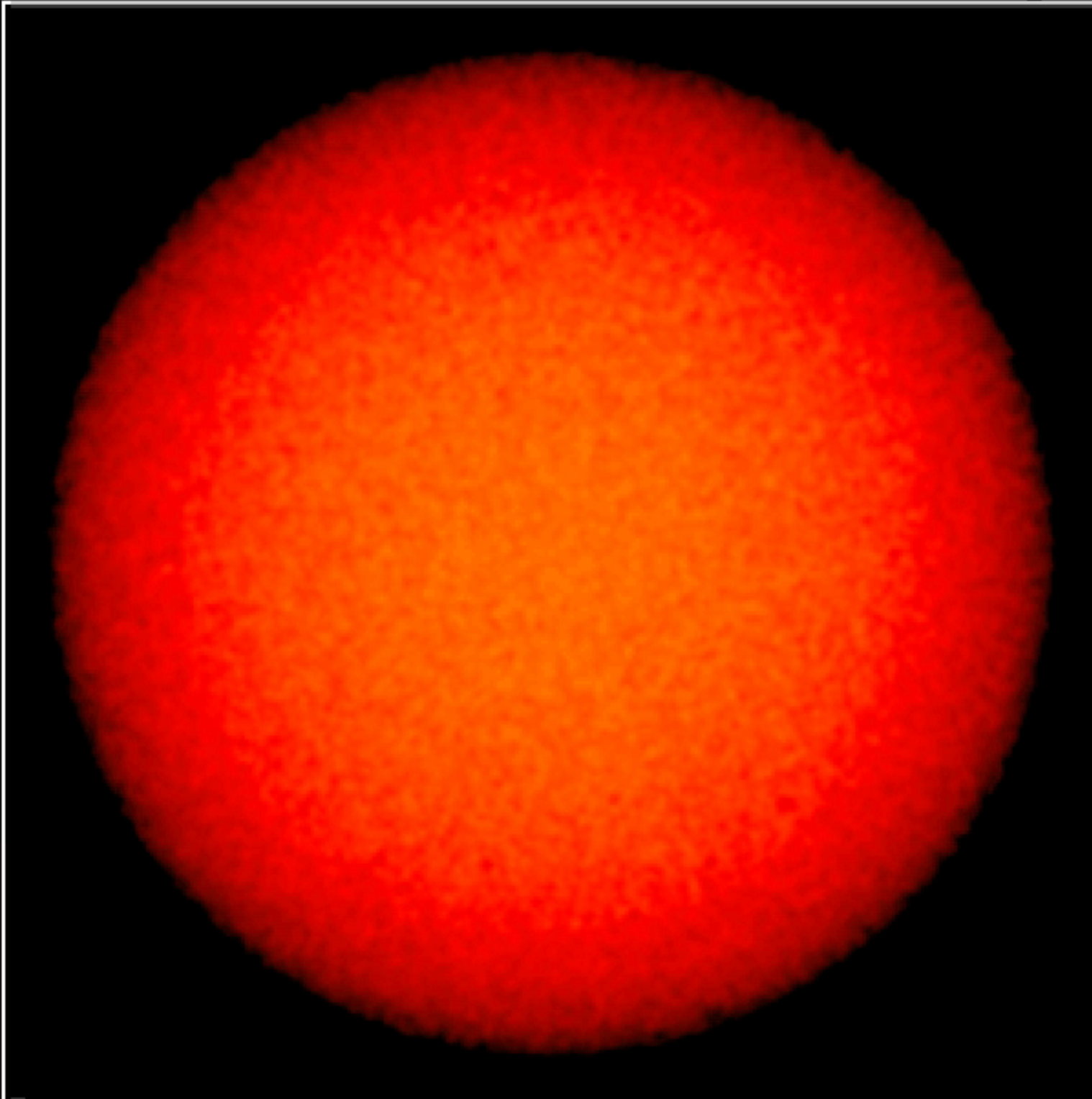
Como se formam as estrelas como o Sol?



Gaseous Pillars • M16

HST • WFPC2

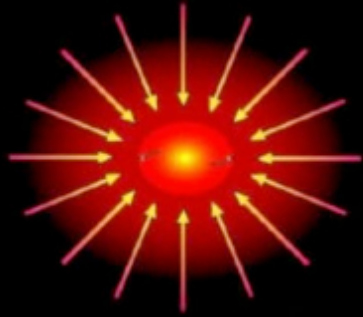
PRC95-44a • ST ScI OPO • November 2, 1995
J. Hester and P. Scowen (AZ State Univ.), NASA



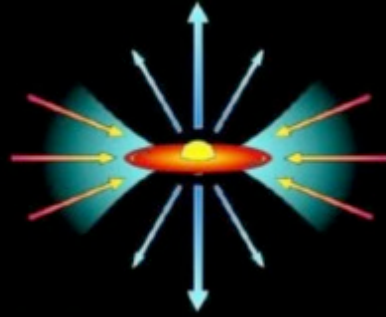
http



Modelo



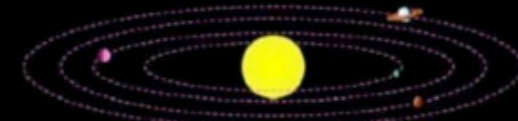
10 000 UA
 $t=0$
 colapso gravitacional



500 UA
 $t=10^5 - 10^6$ anos
 Estrela T Tauri, disco e ventos



200 UA
 $t=10^6 - 10^7$ anos
 Estrela Pós-T Tauri, disco remanescente

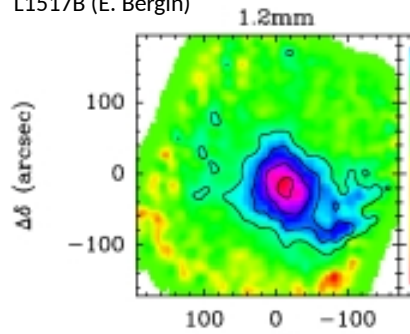


100 UA
 $t > 10^7$ anos
 Estrela formada, sistema planetário

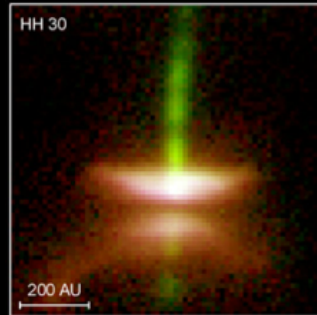
Fig. McCaughrean

Observação

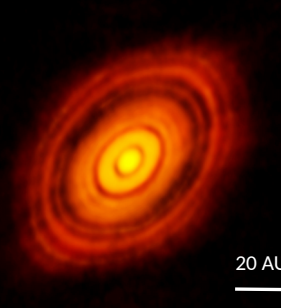
L1517B (E. Bergin)



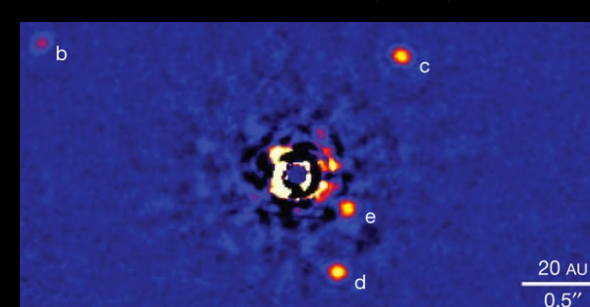
HH 30 - HST - óptico (Burrows)



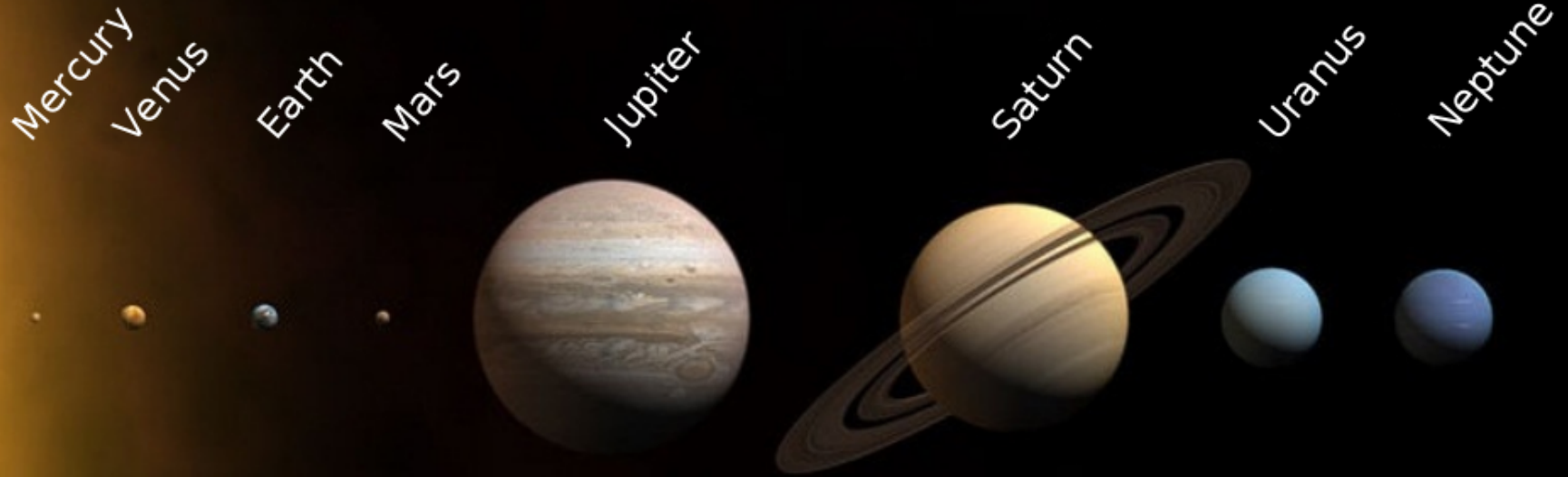
HL Tau - ALMA - 1.3 mm

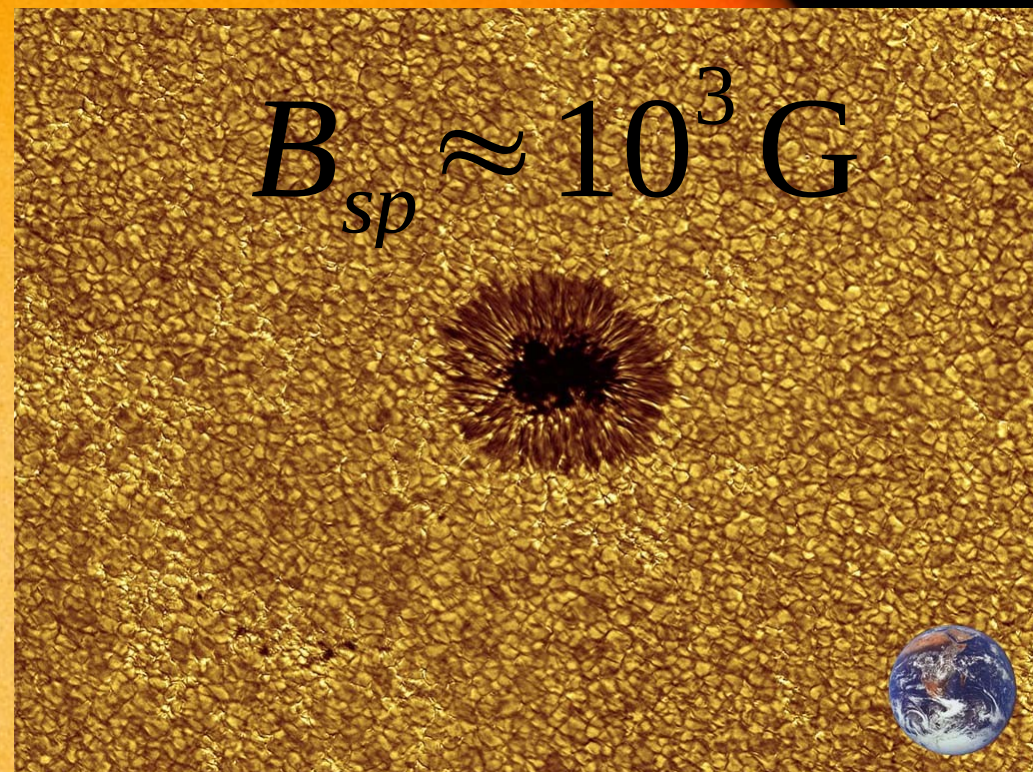
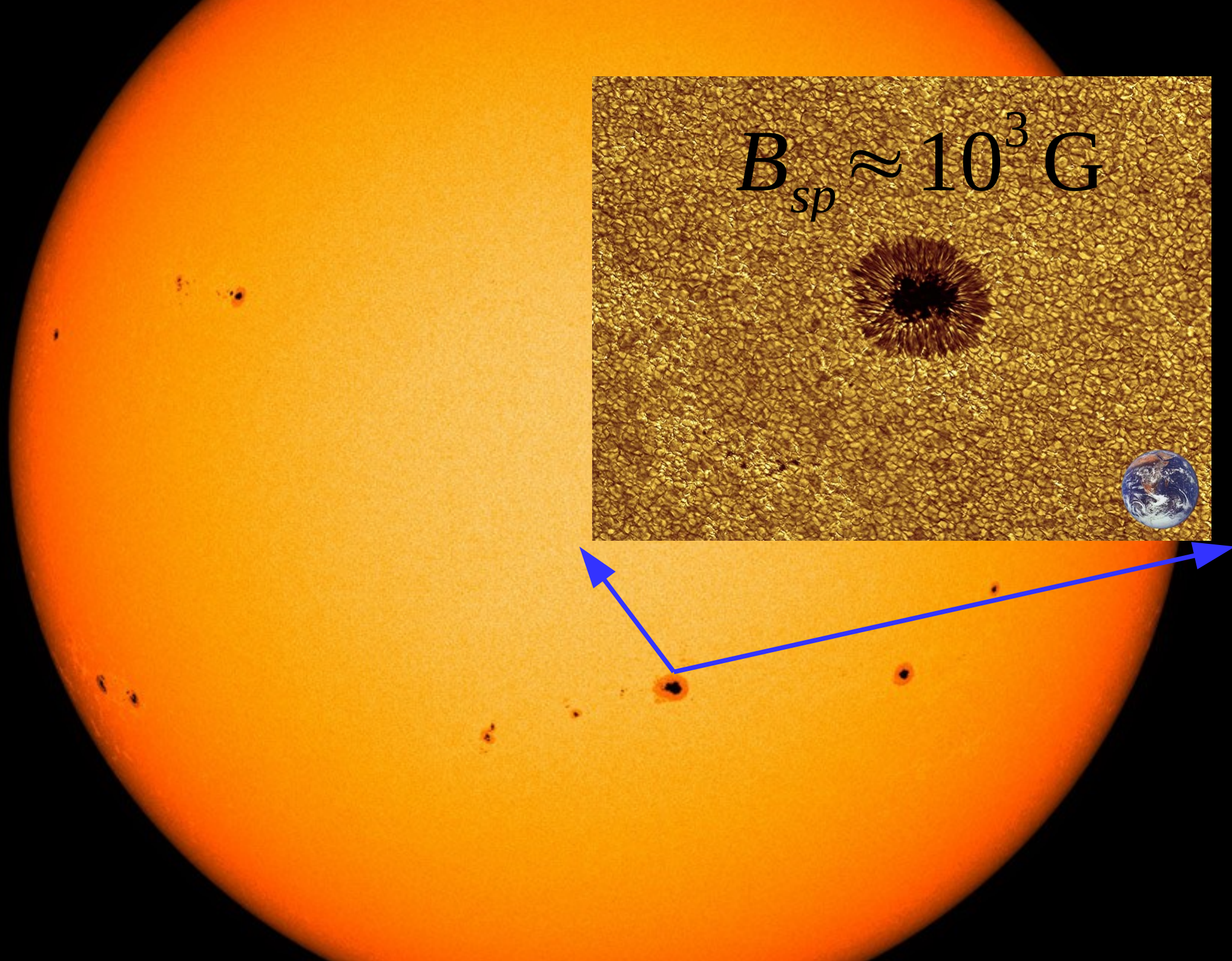


HR 8799 - Keck nIR (Marois)

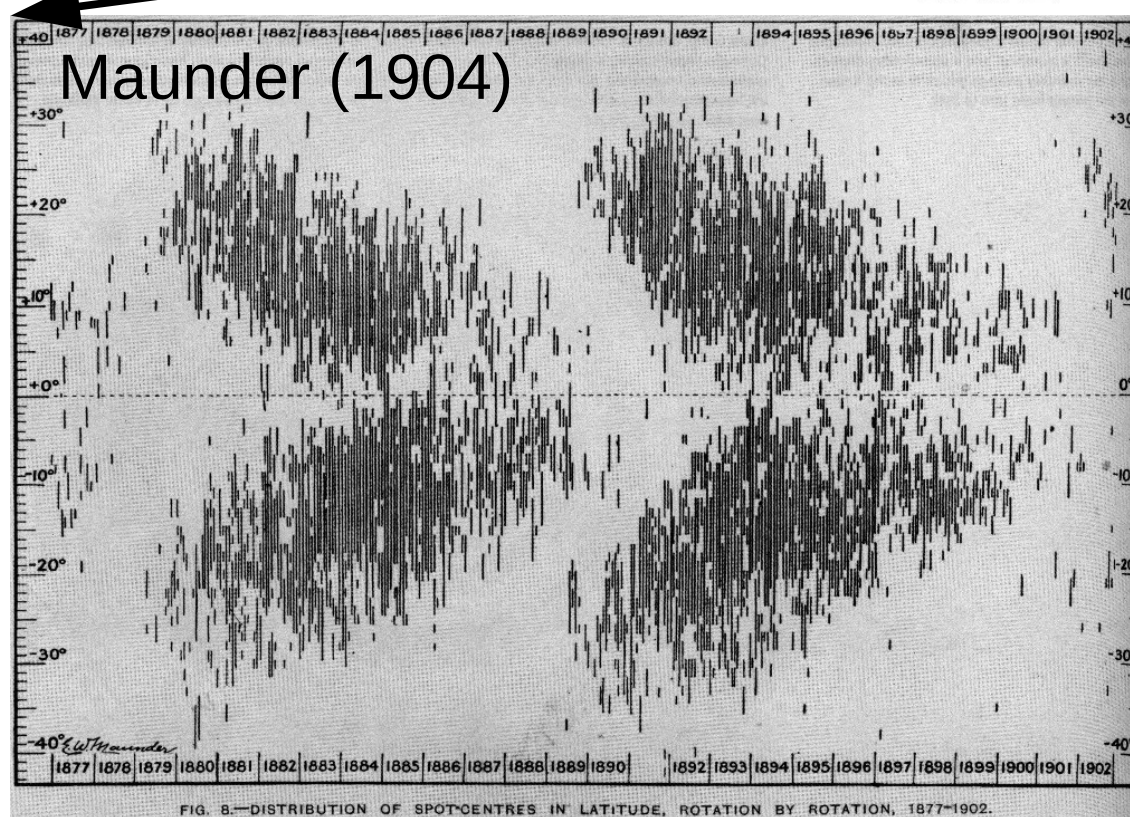
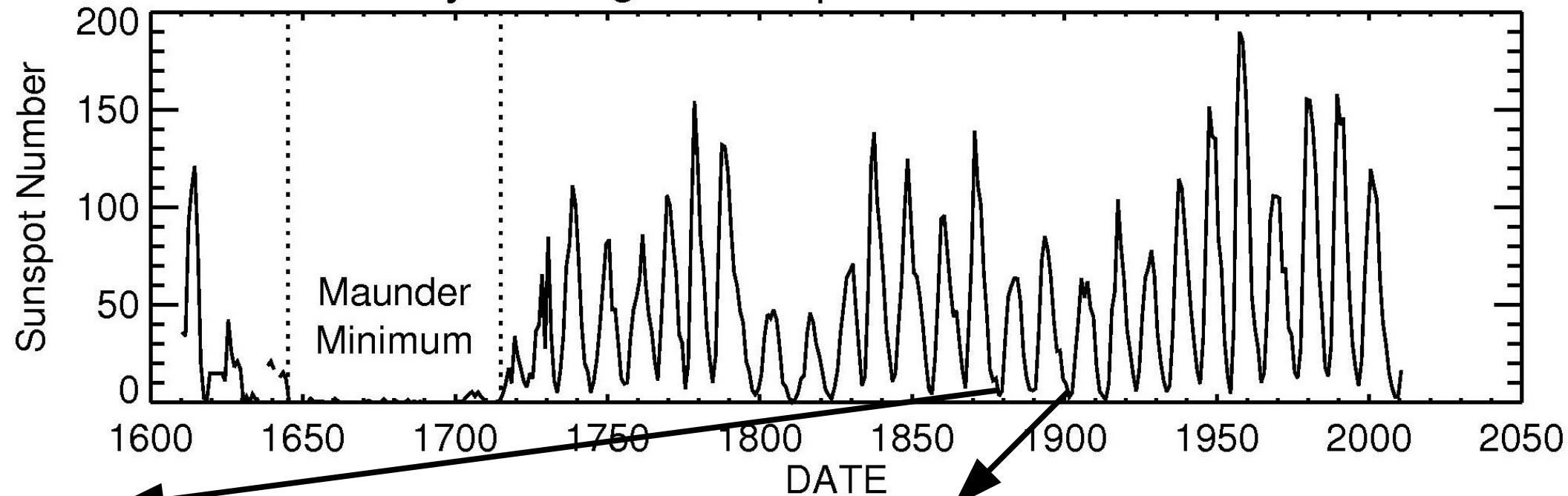


T = 5700 K, Luminosidade = 3.82×10^{26} Watt





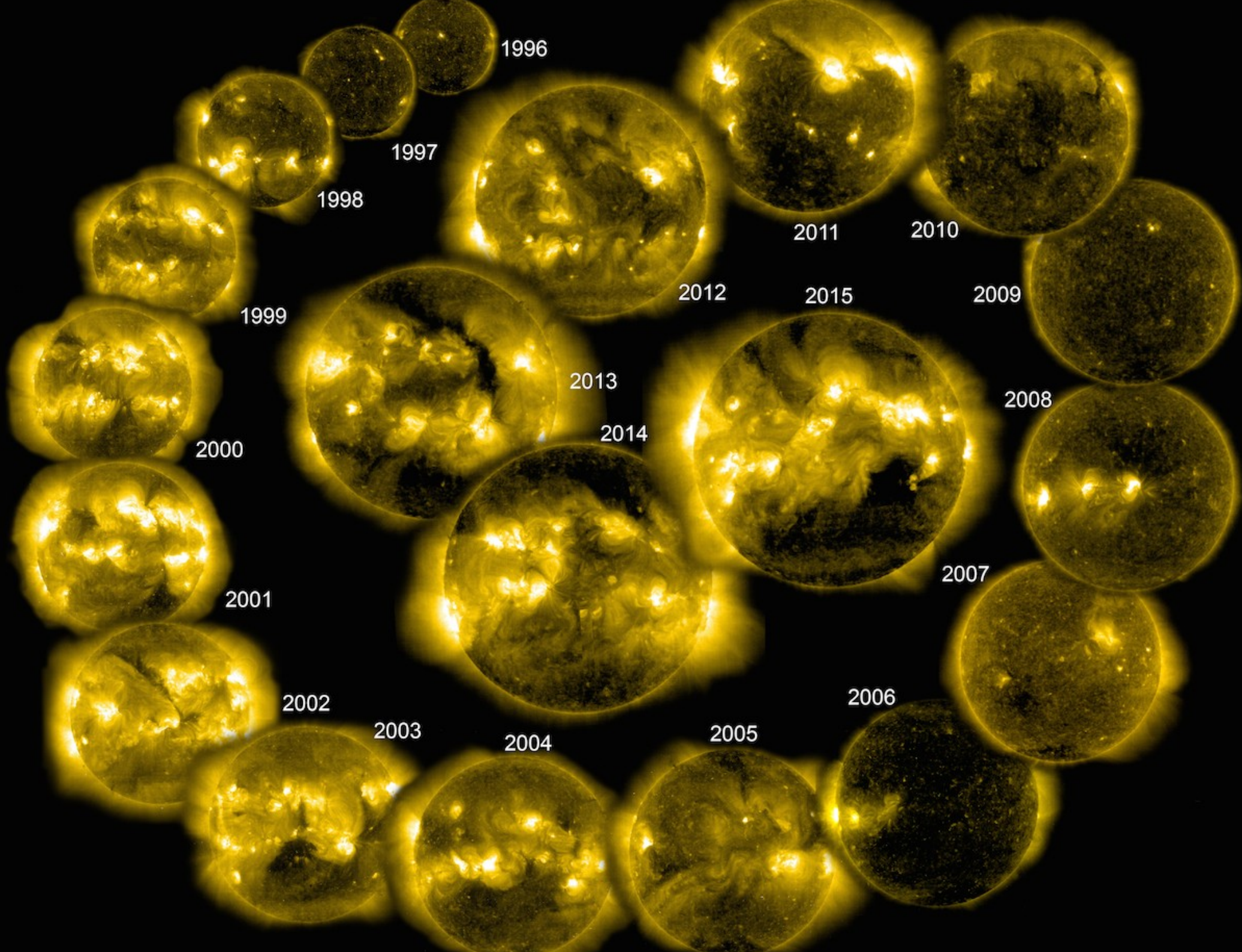
Yearly Averaged Sunspot Numbers 1610-2010

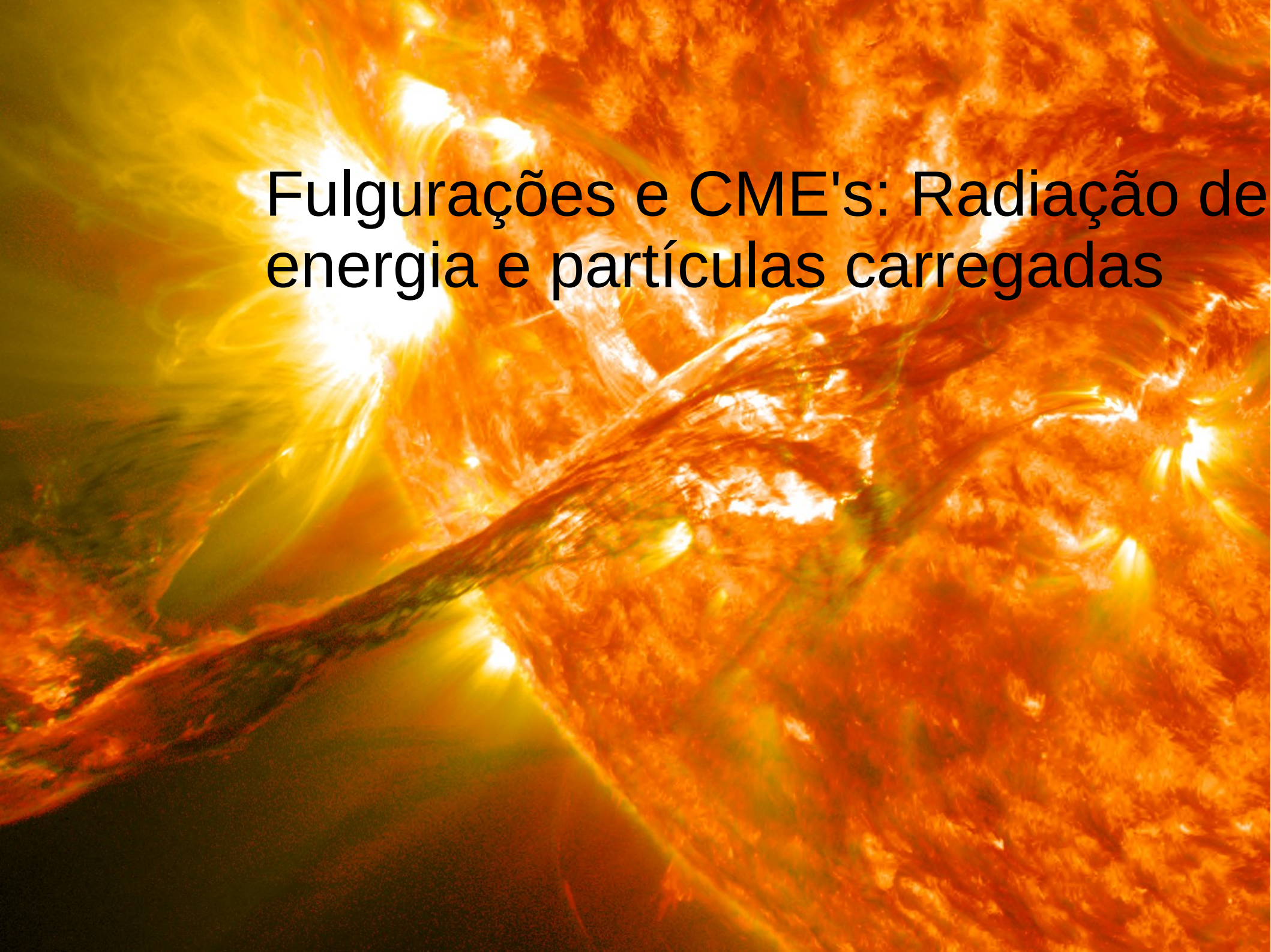


Além do ciclo de 11
anos

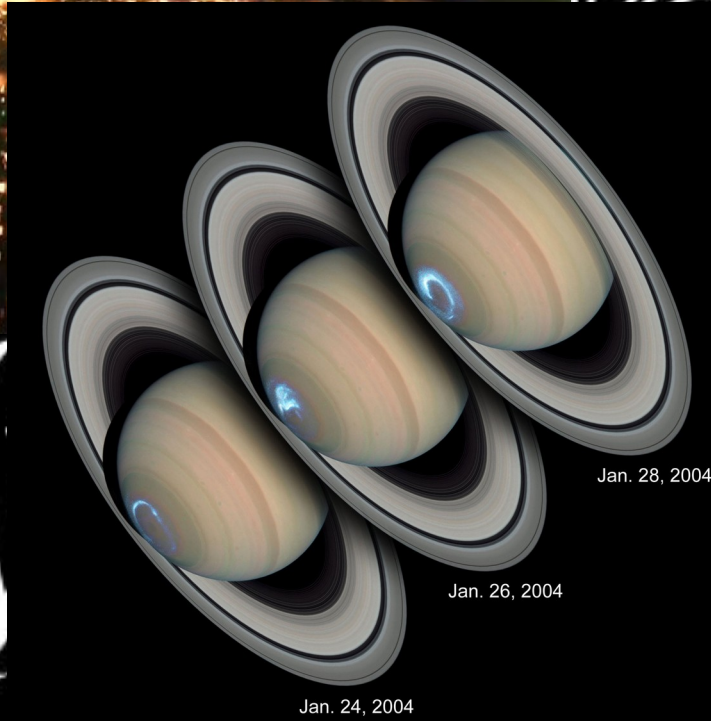
Ciclo de ~80 anos
(Gleissberg, 1973)

Ciclo de ~2 anos
(Fletcher et al. 2010)





Fulgurações e CME's: Radiação de energia e partículas carregadas



Sun

Coronal Mass Ejection