

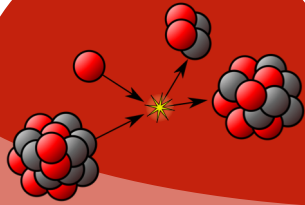
PRESENTAZIONE TESI DI LAUREA IN FISICA AA 2017-2018

**OFFERTA TESI PRESSO IL GRUPPO DI
ASTROFISICA NUCLEARE**

Sara Palmerini

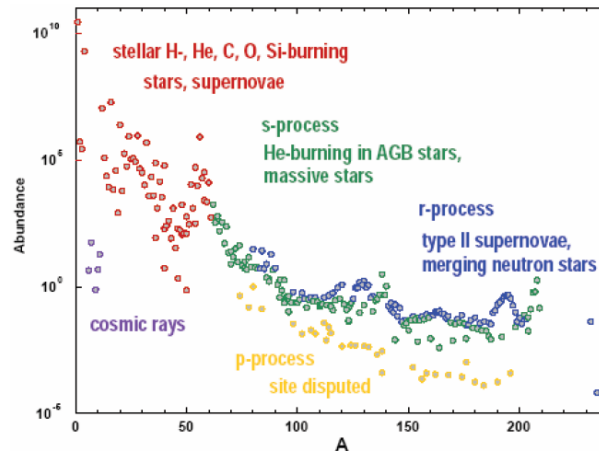
sara.palmerini@unipg.it sara.palmerini@pg.infn.it

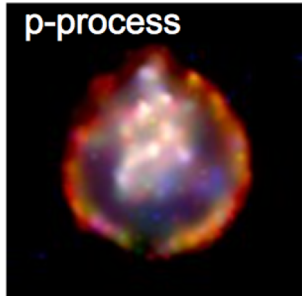
ASTROFISICA NUCLEARE



Stellar modelling

Burbidge, Burbidge, Fowler & Hoyle (B²FH): Rev. Mod. Phys. 29 (1957) 547





Direct rate measurement

- Decay studies
- Masses
- Transfer reactions
- Direct rate measurement

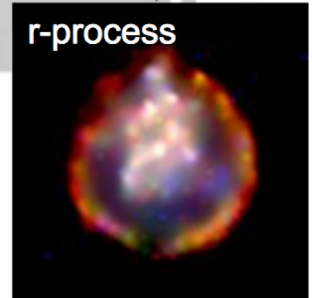


Neutron star crusts
Type I&II Supernovae

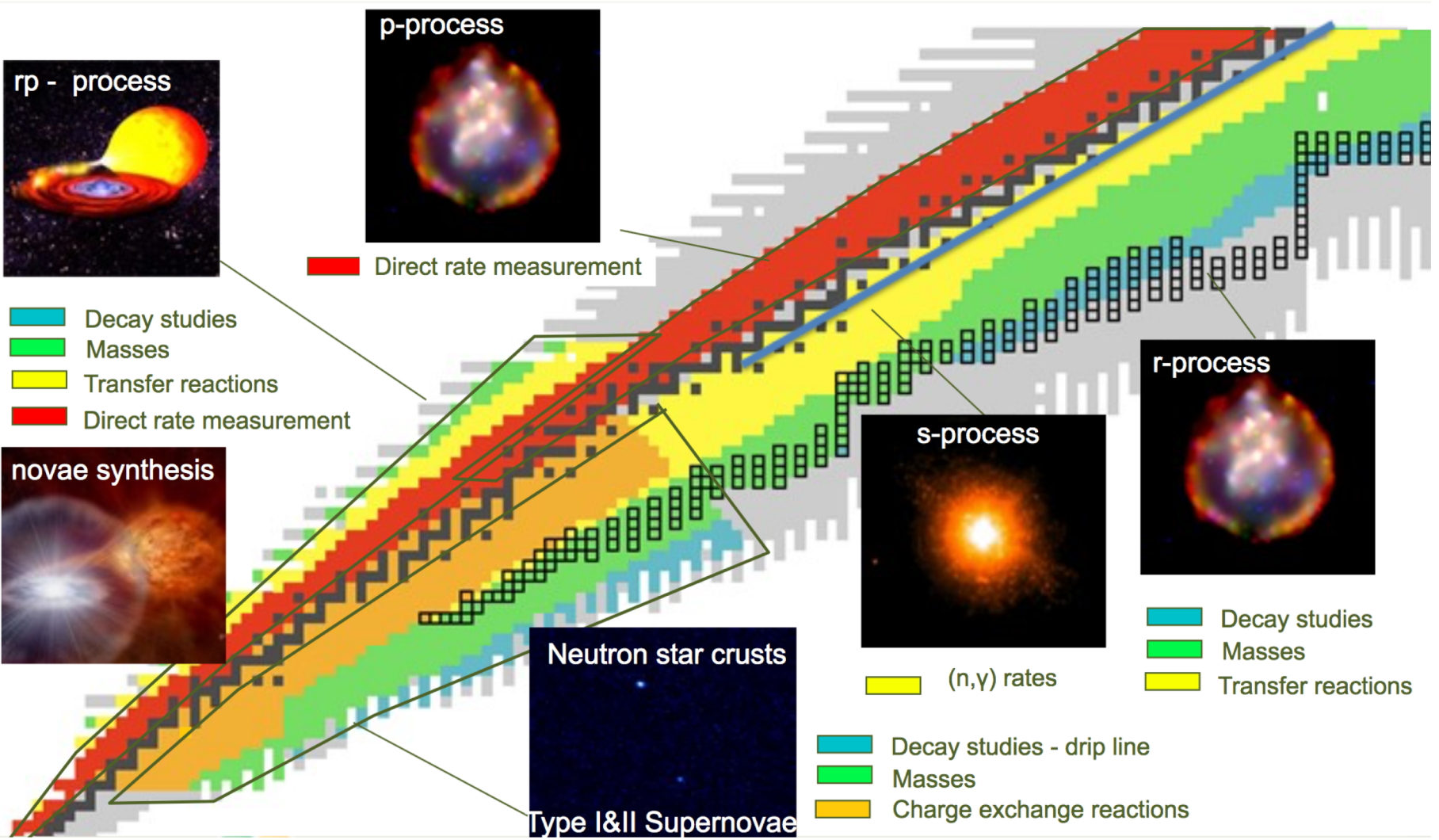


(n,γ) rates

- Decay studies - drip line
- Masses
- Charge exchange reactions



- Decay studies
- Masses
- Transfer reactions



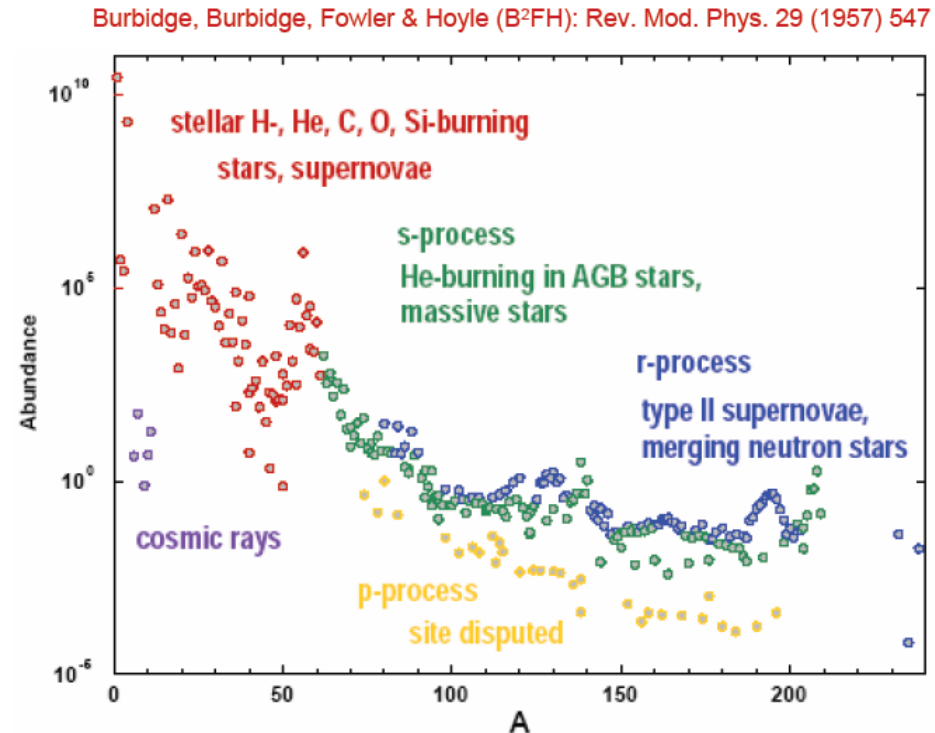
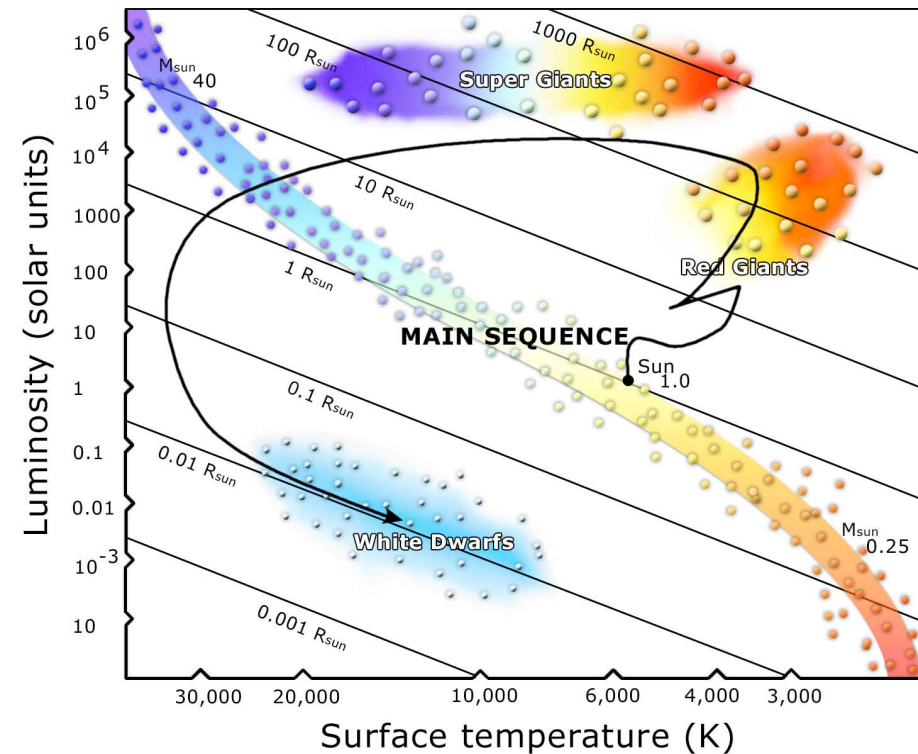
NUCLEOSINTESI STELLARE

nuclear reactions in stars:

a) produce energy

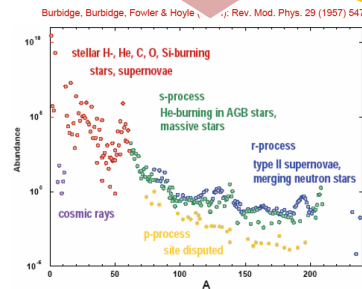
b) synthesise elements

stars = cooking pots of the Universe



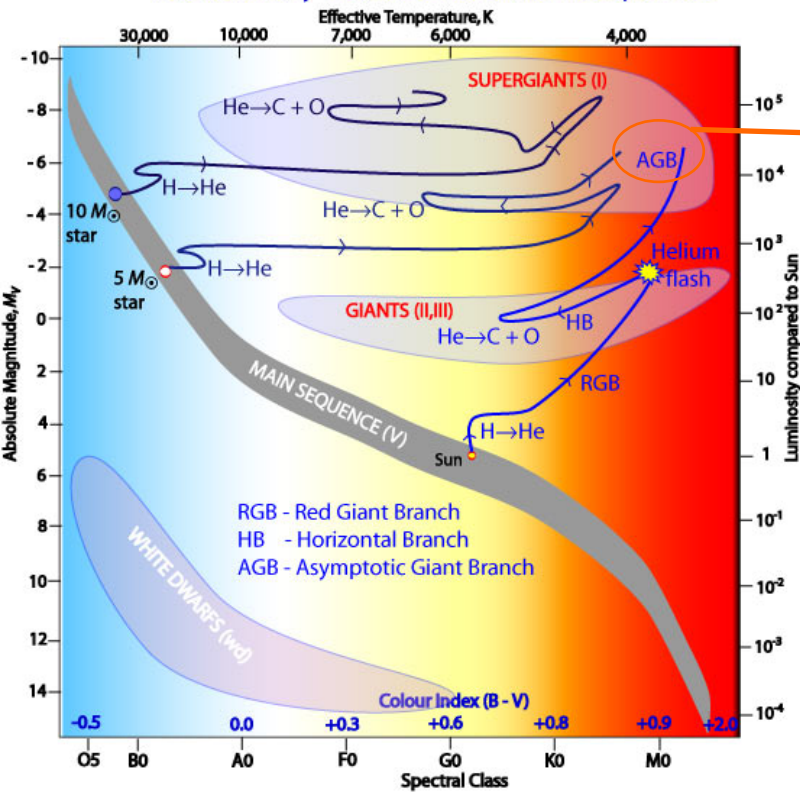
from: M. Wiescher, JINA lectures on Nuclear Astrophysics

COSA FACCIAMO A PG? COSA POTRESTI FARE TU?

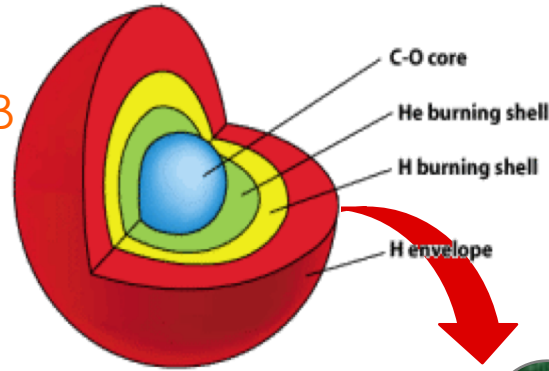


ASYMPTOTIC GIANT BRANCH STARS

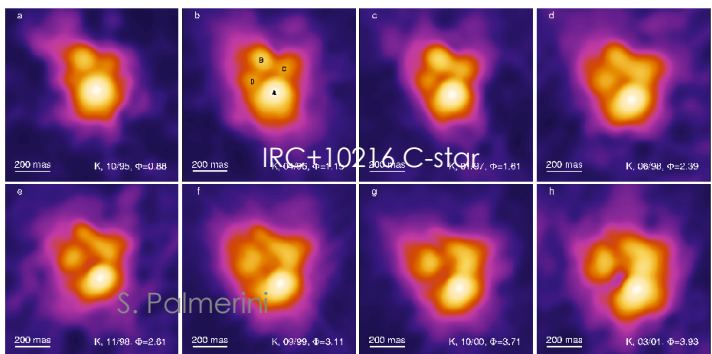
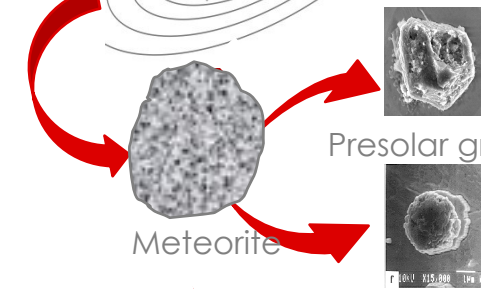
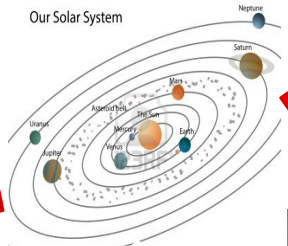
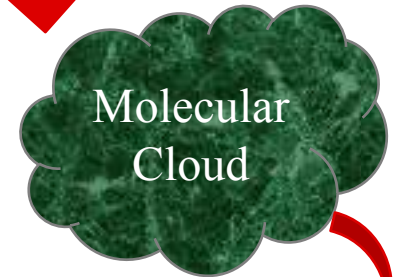
Evolutionary Tracks off the Main Sequence



AGB



Nonostante le loro piccole masse ($M < 8M_{\odot}$) producono il **50%** dei nuclei più pesante del Fe e sono così numerose da aver processato il **75%** del mezzo interstellare (Sedlmayr 1994);



Presolar grains

Meteorite

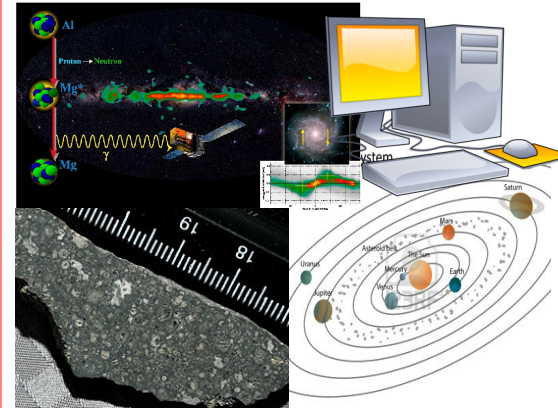
PROPOSTE TESI (MAGISTRALI)



Misura della sezione d'urto della reazione $^{22}\text{Ne}(\alpha, n)^{25}\text{Mg}$ come sorgente di neutroni per la nucleosintesi stellare

[Dr. S. Palmerini

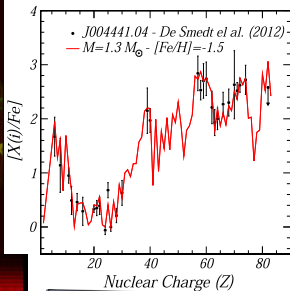
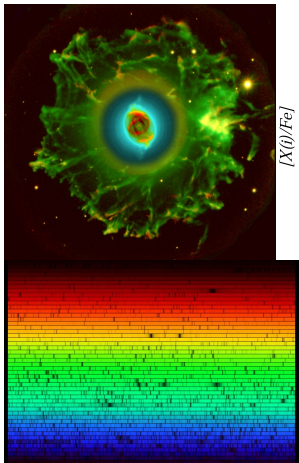
sara.palmerini@pg.infn.it]



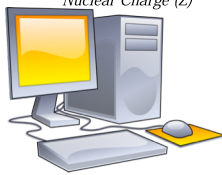
Ipotesi sulla sorgente di radioattività fossile nel Sistema Solare

[Dr. S. Palmerini
Prof. M. Busso

sara.palmerini@pg.infn.it
maurizio.busso@pg.infn.it]

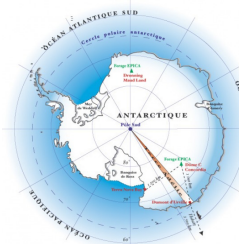


Nucleosintesi in stelle evolute e abbondanze nei progenitori di nebulose planetarie



[Dr. S. Palmerini
Prof. M. Busso

sara.palmerini@pg.infn.it
maurizio.busso@pg.infn.it]



Imaging antartico di stelle evolute: nuove candele standard per la cosmologia

[Prof. M. Busso maurizio.busso@pg.infn.it]