

# Session I

Chaired by Ingo Wiedenhoever

## Hendrik Schatz - Introduction



ready for first session at #nucatown grab a coffee and a bagel

Hendrik Schatz



Hendrik Schatz opening #NucATown 2012

Christian D. Ott



Do we need national/international Nuclear Astrophysics Society? #nucatown

Falk Herwig



Schatz: White paper is goal of this meeting. NucAstro must identify compelling open questions; needs in nuclear physics; astronomy. #NucATown

Robert Rutledge



#nucatown but they are shutting down kitt peak

Sumner Starrfield



#NucATown They are not shutting down Kitt Peak. Withdrawing NSF funds, but future projects are still feasible, e.g., BigBOSS

Timothy Beers

## Art Champagne - Stars



Art Champagne #nucatown says mixing, in particular related to convection, plus other processes, biggest uncertainty in stellar evolution.

Falk Herwig



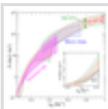
#NucATown Art Champagne: Mixing is the biggest challenge in understanding stellar structure and observations.

Christian D. Ott



#NucATown Art Champagne: C12+C12 cross section still not well constrained, big influence on massive star evolution.

Christian D. Ott



@hypercott Indeed C12+C12 was discussed by several at the JINA Frontiers meeting for this very reason.  
#NucATown

Andrew W. Steiner

## Sarbani Basu - Stellar Observations with KEPLER Constraining Nuclear Processes



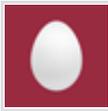
#NucATown Sarbani Basu: What KEPLER can do for nuclear astrophysics: PP,CNO,3-alpha through observation of pulsations

Christian D. Ott



what are the most important nuclear reaction rates needed to understand stars? tweet your top choices at #nucatown

Hendrik Schatz



$C_{12}+C_{12}$   $C_{12}(a,\gamma)$   $3\alpha$  #NucATown

David Chamulak



#NucATown important rates:  $Ne_{22}(a,g)$  and  $Ne_{22}(a,n)$ . We need both.  $C_{12}+C_{12}$  total rate, and its proton and alpha channels at least,  $O_{16}(n,g)$ ...

Marco Pignatari



#nucatown is this interesting for validating models of convection?

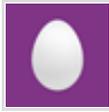
Hendrik Schatz



#nucatown: e.g.  $Ne_{22}+a$ : they can help constrain observables to test convection (looking for example at branching points in presolar grains)

Marco Pignatari

#nucatown What energies are the crucial once for the



Ne22+a reactions?

Artemis Spyrou



#nucatown Ne22+a: to get good yields we need to know them well starting from  $\sim 0.20$ - $0.25$  GK.

Marco Pignatari

## Alex Heger - Open Questions in Nucleosynthesis up to Zn



#NucATown Alex Heger now talking about Open Questions in Stellar Evolution.

Christian D. Ott



#nucatown is there a online database for solar isotopic abundances?

Hendrik Schatz



#NucATown Rotation still the only thing people seem to worry about re GRB progenitors. Problem: Hard to make BHs in rapidly spinning stars!

Christian D. Ott



[nndc.bnl.gov/wallet/](http://nndc.bnl.gov/wallet/) has solar isotopic abundances, and BNL will email a text file with the data, but only the pdf is online. #NucATown

daid kahl

#NucATown solar abundances: comparison between



**Marco Pignatari**

different compilations, nice reference to check: Piersanti et al. 2007, A&A 462



**daid kahl**

Here's the Nuclear Wallet Card ASCII file: [cns.s.u-tokyo.ac.jp/crib/cr...](http://cns.s.u-tokyo.ac.jp/crib/cr...) but I don't know how reliable the isotopic data are. #NucATown



**Robert Rutledge**

Study of SNe progenitors took a big step with SN2009ip an LBV which went SNe 3 yr after "identification". [astronomerstelegram.org/?re...](http://astronomerstelegram.org/?re...) #NucATown