

IAU SYMPOSIUM 307

# NEW WINDOWS ON MASSIVE STARS ASTEROSEISMOLOGY, INTERFEROMETRY AND SPECTROPOLARIMETRY

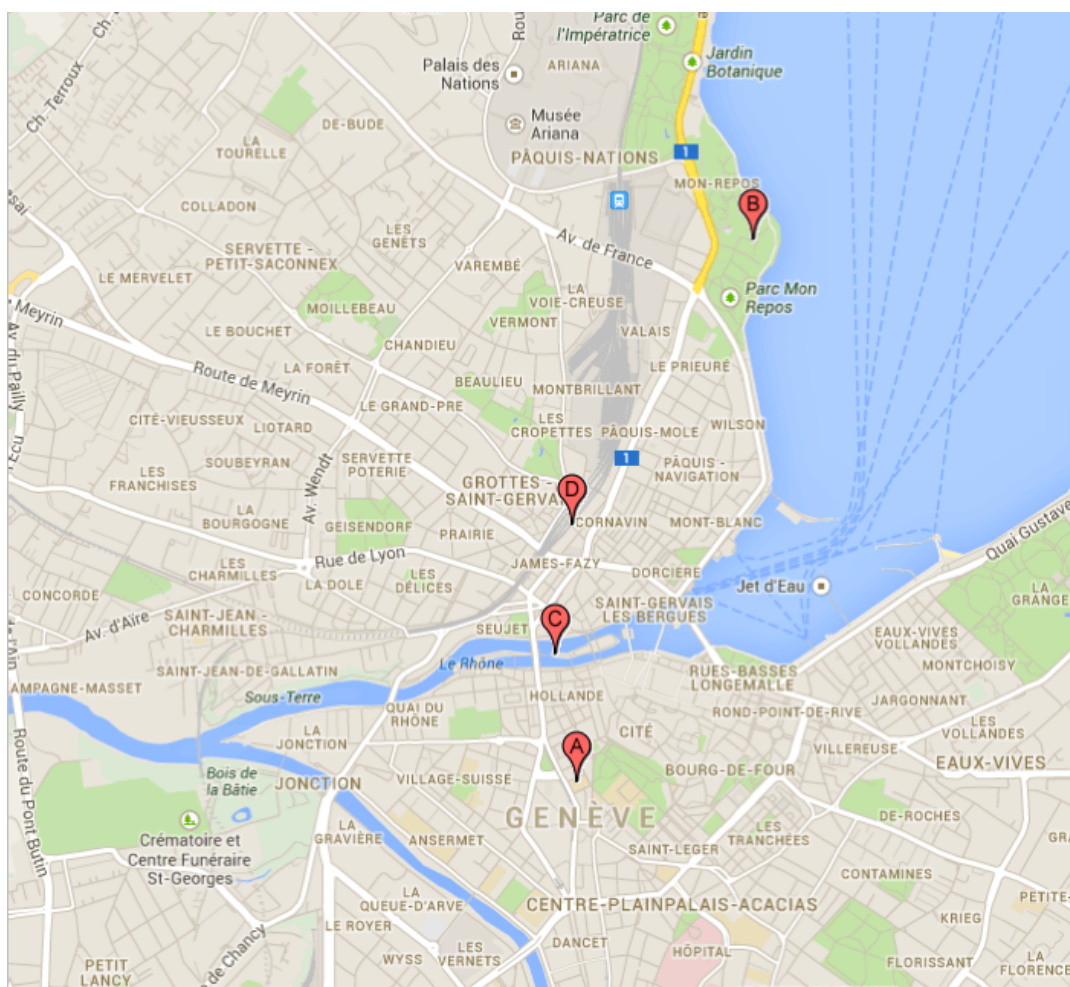
## Daily agenda & scientific program

Sunday June 22, 2014

### Welcome reception

16h00-19h00 *welcome and registration reception at the Science history museum*


Villa Bartholoni  
128, route de Lausanne  
1201 Genève



 Conference room

 Welcome party

 Conference dinner

 Train station

# Monday June 23, 2014

08h30 Welcome address

*G. Meynet*

## **Session I: Challenges in massive star evolution**

*(chair: A. Noels)*

08h40 **Physics of mass loss in massive stars** (R)

*J. Puls*

09h20 Winds of metal-poor OB stars: updates from HST-COS  
UV spectroscopy (C)

*M. García*

09h45 Massive stars near the Eddington-limit, pulsations & mass-loss (C)

*G. Gräfener*

10h10 Discovery of a New Class of Wolf-Rayet Stars in the LMC (C)

*Ph. Massey*

10h35 *Coffee break*

11h05 **Physics of convection in massive stars** (R)

*C. Meakin*

11h45 **Stellar rotation: physics, evolution** (R)

*A. Maeder*

12h25 *Lunch*

## **Session I: Challenges in massive star evolution** (continued)

*(chair: H. Saio)*

14h30 Observed rotational velocities of the O-type stars in the Tarantula  
Nebula single stars and binaries (C)

*O. H. Ramírez Agudelo*

14h55 Combining observational techniques to constrain convection in  
evolved massive star models (C)

*C. Georgy*

15h20 New prescriptions of turbulent transport from local numerical  
simulations (C)

*V. Prat*

15h45 **The advanced phases of massive stars: the path to the core  
collapse and the explosive yields.** (R)

*A. Chieffi*

16h25 *Coffee break*

16h55 **Physics of interacting close binaries** (R)

*N. Langer*

17h35 The First Evidence of a Binary Progenitor for a Type Ib Supernova (C)

18h00 Short poster presentations

18h25 *End of day 1*

## Tuesday June 24, 2014

### **Session I: Challenges in massive star evolution** (continued)

(chair: R. Hirschi)

09h00 Discovery of a Thorne-Zytkow object candidate in the Small Magellanic Cloud (C)

E. Levesque

09h25 Stellar Yields of Rotating First Stars (C)

K. Takahashi

### **Session II: Asteroseismology**

09h50 **Basics of asteroseismology** (R)

A. Miglio

10h30 **Highlights in asteroseismology, with emphasis on massive stars** (R) C. Aerts

11h10 *Coffee break*

11h40 Asteroseismology of OB stars as seen by hundreds of single snapshot spectra (and a few time-series of selected targets) (C)

S. Simón-Díaz

12h05 Photometric Variability of OB-type stars as a New Window on Massive Stars (C)

M. Kourniotis

12h30 *Lunch*

### **Session II: Asteroseismology** (continued)

(chair: L. Cidale)

14h30 Semi-Convective Mixing in Massive Stars as seen by Asteroseismology (C)

E. Moravveji

14h55 Probing high-mass stellar evolutionary models with binary stars (C)

A. Tkachenko

15h20 The puzzling new class of variable stars in NGC 3766: old friend pulsators? (C)

S. Salmon

15h45 Asteroseismology of red giants to constrain angular momentum transport (C)

P. Eggenberger

16h10 *Coffee break*

16h40 Behaviour of pulsations in hydrodynamic models of massive stars (C) C. Lovekin

### **Session III: Interferometry**

17h05 **Basics of interferometry** (R)

G. van Belle

17h45 **An interferometric journey around massive stars** (R)

A. Meilland

18h25 *End of day 2*

# Wednesday June 25, 2014

## Session III: Interferometry (continued)

(chair: M. Limongi)

09h00 Short poster presentations

09h25 Zooming into eta Carinae with interferometry (C)

J. Groh

09h50 On the atmospheric structure and fundamental parameters of red supergiant stars (C)

M. Wittkowski

10h15 Evidences for a large hot spot at the surface of Betelgeuse (C)

M. Montargès

10h40 *Coffee break*

11h10 The recent disk evolution of Achernar resolved by VLTI spectro-interferometry (C)

D. Faes

11h35 General discussion on a few chosen questions

(leaders: A. ud Doula  
& R. Hirschi (tbc))

12h00 *End of day 3*

*FREE AFTERNOON, EXCURSION*

# Thursday June 26, 2014

## Session IV: Spectropolarimetry

(chair: C. Neiner)

- 09h00 **Basics of spectropolarimetry** (R) *J. Landstreet*  
09h40 **Recent highlights of spectropolarimetry** (R) *J. Grunhut*  
10h20 Constraining general massive-star physics by exploring the  
unique properties of magnetic O-stars : rotation,  
macroturbulence, and subsurface convection (C) *J. Sundqvist*  
10h45 B fields in OB stars (BOB) : first results of the survey (C) *T. Morel*  
11h10 *Coffee break*  
11h40 Unraveling the brightness variability of sigma Ori E (C) *M. Oksala*  
12h05 Revealing the Mass Loss Structures of Three Key Massive  
Binaries Using Optical Spectropolarimetry (C) *J. Lomax*

12h30 *Lunch*

## Session IV: Spectropolarimetry (continued)

(chair: D. Arnett)

- 14h30 **Magnetic fields-stellar winds connection** (R) *A. ud Doula*  
15h10 Linear polarimetry as a tool to constrain aspherical mass loss (C) *J. Vink*  
15h35 The BinaMIcS project: understanding the origin of magnetic fields  
in massive stars through close binary systems (C) *E. Alecian*  
16h00 Angular momentum transport by unstable toroidal magnetic  
fields (C) *M. Gellert*

16h25 *Coffee break*

## Session V: Synergies between different techniques

- 16h55 **Links between surface magnetic fields, abundances, and surface  
rotation in clusters and in the field** (R) *N. Przybilla*  
17h35 Short poster presentations  
18h00 General discussion on a few chosen questions  
(leaders: H. Henrichs  
& D. Baade (tbc))

18h25 *End of day 4*

*CONFERENCE DINNER*

## Friday June 27, 2014

### **Session V: Synergies between different techniques** (continued) (chair: E. Levesque)

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|-------|--|--------------------|
| 09h00 | Synergies between asteroseismology and spectropolarimetry to constrain transport and mixing processes in massive stars (C) | <i>S. Mathis</i>   |
| 09h25 | Combining seismology and spectropolarimetry: from CoRoT and MOST to K2 and BRITE (C)                                       | <i>C. Neiner</i>   |
| 09h50 | X-ray emission from magnetic massive stars (C)   | <i>Y. Nazé</i>     |
| 10h15 | Massive Star Astrophysics with MSCF (C)  | <i>D. Bomans</i>   |
| 10h40 | <i>Coffee break</i>  |                    |
| 11h10 | The Massive star population at the Center of the Milky Way (C)   | <i>F. Najarro</i>  |
| 11h35 | Accretion Signatures on Massive Young Stellar Objects (C)  | <i>F. Navarete</i> |

12h00 *Lunch*

### **Session VI: Towards a synthetic view** (chair: Ph. Massey)

- |       |   |                                 |
|-------|---|---------------------------------|
| 14h00 | <b>3D and Some Other Things missing from the Theory of Massive Star Evolution (S)</b> | <i>D. Arnett</i>                |
| 14h30 | <b>Asteroseismology of massive stars: the next steps (S)</b>                          | <i>A. Noels &amp; M. Godart</i> |
| 15h00 | <b>Interferometry of massive stars: the next steps (S)</b>                            | <i>Ph. Stee</i>                 |
| 15h30 | <b>Spectropolarimetry of massive stars, the next step (S)</b>                         | <i>G. Wade</i>                  |
| 16h00 | <i>End of day 5 and of the symposium</i>  |                                 |