



BINAMICS WORKSHOP #5
November 27th – December 1st 2017
Université Grenoble Alpes, France

SCHEDULE

Monday November 27th

14:00 – 14:30 Welcome + Introduction: **E. Alecian** (IPAG, France)

SESSION 1: MAGNETIC MASSIVE BINARIES AND MAGNETOSPHERIC INTERACTION

Chair: Gregg Wade

Vercors room

14:30 – 15:00 Update on the analysis and modelisation of magnetic fields and magnetospheres in O-type single and binary systems (**V. Petit**, University of Delaware, USA)

15:00 – 15:30 The Magnetospheres of the Magnetic Early B-type Stars (**M. Shultz**, Uppsala University, Sweden)

15:30 – 16:00 Coffee break

16:30 – 17:00 Current state of simulations of massive star magnetospheres (**A. ud-Doula**, Penn State Scranton, USA)

17:00 – 17:30 Interferometric observations of BinaMICS targets (**J.-B. Le Bouquin**, IPAG/UMI, **in remote from USA**)

17:00 – 17:30 Physical and Magnetic Properties of Hot Binaries Observed by BinaMICS (**M. Shultz**, Uppsala University, Sweden)

17:30 – 18:00 Discussion

Guidelines:

- Discuss the properties of the magnetic fields and massive OB binaries
- Compare to isolated OB stars
- Discuss the definition of isolated massive stars
- Discuss the magnetospheres interaction

Tuesday November 28th

SESSION 2: THE BIRTH, EVOLUTION AND SUCCESSORS OF MASSIVE BINARIES

Chair: Véronique Petit

Vercors room

- 8:30 – 9:00 The magnetic properties of intermediate and high-mass binaries (**E. Alecian**, IPAG, France)
- 9:00 – 9:30 Protostellar disk and outflow formation in high-mass dense core collapse with non-ideal MHD (**B. Commerçon**, CRAL, France)
- 9:30 – 10:00 Forming spectroscopic massive proto-binaries by disk fragmentation (**D. Meyer**, University of Exeter, UK)

10:00 – 10:30 Coffee break

- 10:30 – 11:00 Modulation of Accretion onto Forming Massive Stars by Line-Driven Ablation (**N.D. Kee**, University of Tübingen, Germany)
- 11:00 – 11:30 An overview of the LIFE project (**A. Martin**, LESIA, France)
- 11:30 – 12:00 The O-type binary Plaskett's star: driving astronomers crazy for 96 years (**G. Wade**, RMC, Canada)
- 12:00 – 12:30 Discussion

Guidelines:

- Discuss the general properties of magnetic fields of short-period massive binaries as well as their evolutionary status
- Discuss the impact of close binary evolution on the origin and evolution of fossil magnetic fields
- Compare to other studies of magnetic fields in single and in evolved stars

12:30 – 14:00 Lunch (in the Forestini entrance)

SESSION 3: MAGNETIC INTERMEDIATE-MASS BINARIES AND STAR-STAR INTERACTION

Chair: Matt Shultz

Vercors room

- 14 :00 – 14 :20 HD 104237 (**C. Dougados**, IPAG, France)
- 14 :20 – 14 :50 The properties of Ap/Bp stars from a volume-limited survey (**G. Wade**, RMC, Canada)
- 14 :50 – 15 :10 Detection of magnetic fields in faint Ap/Bp stars observed with K2 (**C. Neiner**, LESIA, **in remote from Meudon, France**)
- 15 :10 – 15 :30 Recent discoveries in a strongly magnetic binary system HD 34736 (**E. Semenko**, SAO, Russia)

15:30 – 16:10 Coffee break

- 16:10 – 16:40 Magnetic fields driven by tidal mixing in radiative intermediate-mass stars (**J. Vidal**, IsTerre, France)
- 16:40 – 17:00 HD 66051, the first eclipsing binary system hosting a magnetic chemically peculiar primary (**O. Kochukhov**, Uppsala University, Sweden)
- 17:00 – 17:30 The magnetic SB stars of the open cluster magnetic Ap star survey (**J. Landstreet**, UWO, Canada)

17:30 – 18:00 Discussion

Guidelines:

- Discuss the magnetic properties of the Ap/Bp in close binary systems, and compare with isolated Ap/Bps, emphasize the broader context of detection of faint magnetic stars.
- Discuss the circularisation/synchronisation status of the magnetic systems
- Discuss the possible impact of star-star interaction on B field
- Discuss the origin of magnetic fields in intermediate-mass (and massive) stars

Wednesday November 29th

SESSION 4: COOL AND PMS STARS

Chair: John Landstreet

Vercors room

8:30 – 9:00 Magnetism of cool main sequence binary systems: overview of BinaMIcS observations and future plans (**J. Morin**, LUPM, France)

9:00 – 9:30 Zeeman Doppler imaging of sigma2 CrB (**O. Kochukhov**, Uppsala University, Sweden)

9:30 – 10:00 V471 Tau (**G. Hussain**, ESO, Germany)

10:00 – 10:30 Coffee break

10:30 – 11:00 The Magnetic Fields of Planet-Hosting Stars (**S. Marsden**, USQ, Australia)

11:00 – 11:30 Spectropolarimetric observations of HD 104237 (**E. Alecian**, IPAG, France)

11:30 – 12:30 Discussion

Guidelines:

- Discuss the first results
- Compare to single systems

12:30 – 14:00 Lunch (in the Forestini entrance)

WORKING GROUPS SESSIONS

Vercors, Belledonne, Chartreuse rooms

14:00 – 15:30 Working groups

15:30 – 16:00 Coffee break

16:00 – 18:00 Working groups

Thursday November 30th

8:30 – 10:00 Working groups

10:00 – 10:30 Coffee break

10:30 – 12:00 Working groups

12:30 – 14:00 Lunch (in the Forestini entrance)

14:00 – 15:30 Working groups

15:30 – 16:00 Coffee break

16:00 – 18:00 Working groups

Thursday December 1st

8:30 – 10:00 Summary of the workshop

10:00 – 10:30 Coffee break

10:30 – 12:00 Discussion

Guidelines:

- What needs to be done
- Who is doing what?
- Timelines
- Manpower

WORKING GROUPS

The objective of a working group is a brainstorming of a small number of people to focus on a specific topic and answer the following questions:

- What do we know?
- What do we want to know?
- What method(s) is (are) required?
- List of tasks ordered by priority/urgency

It is not requested to consider manpower. We will assume, first, that we have infinite manpower. Manpower and who is doing what will be discussed on Friday morning.

Below are ideas of topics:

- WG on the analysis of BY Dra and other cool binaries (Stephen, Gaitee, Julien)
- WG on HD 160922 (Coralie, Patricia, Oleg) (Mail envoyé à Patricia le 11 octobre)
- WG on comparing the SC binamics and the SC mimes (Gregg, Evelyne, Véro)
- WG on the magnetospheres of binaries (Asif and Matt)

- Tweaking of SB2 (Evelyne, Oleg)
- HD 55719 (Gregg +)
- eps Lup (Matt +)

- HD 34736 (Eugene + Oleg + Gregg)
- HD 104237 (Evelyne + Catherine + Torsten)
- Interferometry