

2nd BINA WORKSHOP

“BINA as an expanding international collaboration”

SCIENTIFIC PROGRAMME

Venue: Meridian Room, Royal Observatory of Belgium, Brussels

Date: October 9-12, 2018

Email: 18bina@oma.be

Website: <http://aa.oma.be/18bina>

Rooms: All presentations and coffee/tea breaks take place in the Meridian Room of the Royal Observatory of Belgium. The lunch breaks are at the dining room of the Royal Meteorological Institute (same site).

Type of presentations:

IRNN = Invited Review (40 min, including 8 min of questions)

ITNN = Invited Talk (30 min, including 7 min of questions)

CTNN = Contributed Talk (20 min, including 5 min of questions)

WiFi access: (WPA-protocol needed)

Network: ROB-External

Password: ROB-Access!

TUESDAY 09/10/2018

08:30 **Start of day 1** (Meridian room opens)

09:00 Registration

09:45 Opening ceremony

Dr. Ronald Van der Linden (director of Royal Observatory of Belgium)

Dr. Santosh Joshi (Indian PI of BINA)

Ms. Margarida Freire (BELSPO)

Dr. Xavier Verians (AMOS)

SESSION 1: INSTRUMENTATION OF THE INDO-BELGIAN TELESCOPES

(chair: Dr. Patricia Lampens)

10:30 IR01 Astrophysics and exoplanets with a 4-m class telescope
by Dr. Ignasi Ribas (Institute of Space Sciences & Institut d'Estudis Espacials de Catalunya, Spain)

11:10 **Coffee/Tea break**

11:40 IR02 The far-reaching impact of surveys carried out with 4m-class telescopes
by Dr. Anna Pasquali (ARI, Heidelberg, Germany)

12:20 IR03 Performance of the instruments on 3.6-m Devasthal Optical Telescope
by Dr. Amitesh Omar (ARIES, Nainital, India)
(*skype presentation*)

13:00 **Lunch break**

(chair: Prof. Katrien Kolenberg)

14:30 IR04 Current & future science instruments for the 3.6-m Devasthal Optical Telescope
by Prof. Anamparambu Ramaprakash (IUCAA, Pune, India)

15:10 IR05 10 years of HERMES at the 1.2-m Mercator telescope
by Prof. Hans Van Winckel (KU Leuven, Leuven, Belgium)

15:50 CT01 Upgrading HERMES: an improved fiber link and a new wavelength calibrator
by Dr. Gert Raskin (KU Leuven, Leuven, Belgium)

16:10 **Coffee/Tea break**

16:30 IR06 The High Resolution Spectrograph of the Aryabhata Research Institute of
Observational Sciences
by Dr. Jeewan C. Pandey (ARIES, Nainital, India)
(skype presentation)

17:10 Round table discussion

18:10 **End of day 1**

WEDNESDAY 10/10/2018

09:00 **Start of day 2** (Meridian room opens)

(chair: Dr. Michaël De Becker)

09:30 CT02 A sharp future for the 3.6-m Devasthal Optical Telescope? The power of adaptive
optics for medium size telescopes
by Dr. Gilles Orban de Xivry (STAR, ULiège, Belgium)

SESSION 2: DATA & SCIENCE WITH THE INDO-BELGIAN TELESCOPES

Session 2.1: Solar system and exoplanet studies with the Indo-Belgian telescopes

09:50 IR07 Solar system studies with the Indo-Belgian telescopes
by Dr. Shashikiran Ganesh (PRL, Ahmadabad, India)

10:30 CT03 Size estimation of orbital debris using a zenith-pointing telescope
by Mr. Bikram Pradhan (STAR, ULiège, Belgium)

Session 2.2: Galactic astronomy with the Indo-Belgian telescopes

(chair: Prof. Aruna Goswami)

10:50 IR08 Scientific potential of Indo-Belgian 3.6-m Devasthal Optical Telescope and 4-m
International Liquid Mirror Telescope in the field of Galactic Astronomy
by Prof. Ram Sagar (IIA, Bangalore, India)

11:30 **Coffee/Tea break**

- 11:50 CT04 Optical characterization and radial velocity monitoring of exoplanet and eclipsing binary candidates
by Dr. Yogesh Joshi (ARIES, Nainital, India)
- 12:10 CT05 Eclipse mapping of Algol-type systems with oscillating delta Scuti type components
by Dr. Patricia Lampens (ROB, Brussels, Belgium)
- 12:30 CT06 Light curve parameters of Cepheid and RR Lyrae variables at multiple wavelengths: theory vs. observations
by Prof. Harinder Singh (DU, Delhi, India)
- 12:50 CT07 Rotation rates of pre-main sequence stars
by Dr. Soumen Mondal (SNBNCBS, Kolkata, India)
- 13:10 **Lunch break**
- 14:30 CT08 Instabilities and mass-loss in massive stars
by Dr. Abhay Pratap Yadav (Government Model College Shahpura, Dindori, India)
(skype presentation)
- 14:50 CT09 Accurate estimation of effective temperature and metallicity of asteroseismic targets with BINA telescopes
by Prof. Anwesh Mazumdar (HBCSE-TIFR, Mumbai, India)

Session 2.3: Extragalactic astronomy with the Indo-Belgian telescopes

(chair: Prof. Maarten Baes)

- 15:10 IT01 The diversity of Active Galactic Nuclei variability: Some highlights and challenges
by Prof. Gopal Krishna (ARIES, Nainital, India)
- 15:40 CT10 Complex X-ray/ultraviolet/optical variabilities of the Seyfert 1 galaxy NGC4593
by Dr. Sachindra Naik (PRL, Ahmadabad, India)
- 16:00 CT11 Multi-wavelength studies of Zwicky's Nonet
by Mr. Biju Koonammakkil George (W.M.O Arts & Science College, Kalpetta, India)
(skype presentation)
- 16:20 **Coffee/Tea break**
- 16:40 CT12 Multi-wavelength studies of giant radio galaxies
by Mr. Pratik Dabhade (IUCAA, Pune, India)
(skype presentation)
- 17:00 CT13 Strong lensing studies with the 3.6-m Devasthal Optical Telescope: opportunities and challenges
by Dr. Dominique Sluse (STAR, ULiège, Belgium)
- 17:20 CT14 REMAP: REverberation Mapping of the Active galactic nuclei Program at the 2-m Himalayan Chandra Telescope
by Mr. Amit Kumar Mandal (IIA + Christ University, Bangalore, India)
- 17:40 CT15 Observations of galaxy collisions and prediction of parameters of resulting galaxies
by Mr. Rajesh Kumar Dubey (Institute of Advanced Physics, Yamuna Nagar, India)
- 18:00 **End of day 2**

THURSDAY 11/10/2018

09:00 **Start of day 3** (Meridian room opens)

SESSION 3: DATA & SCIENCE WITH OTHER TELESCOPES OF INTEREST

Session 3.1: Solar system and exoplanet studies with other telescopes of interest

(chair: Dr. Michaël De Becker)

09:30 IR09 Study of small bodies of the Solar System with small and large telescopes
by Dr. Emmanuel Jehin (STAR, ULiège, Belgium)

Session 3.2: Galactic astronomy with other telescopes of interest

(chair: Prof. Anamparambu Ramaprakash)

10:10 IR10 Galactic sources at low radio frequency
by Prof. Ishwara Chandra Chenakkod (NCRA-TIFR, Pune, India)
(presented by Prof. Anandmayee Tej)

10:50 CT16 Application of convolutional neural nets for stellar spectral analysis
by Dr. Kaushal Sharma (IUCAA, Pune, India)
(skype presentation)

11:10 **Coffee/Tea break**

11:30 CT17 Evolution of magnetic activities on active solar-type stars: starspot modulation, surface differential rotation, and flares
by Dr. Subhajeet Karmakar (PRL, Ahmedabad, India)
(skype presentation)

11:50 CT18 Three years of AstroSat: India's first mission dedicated to astronomy
by Dr. Girish Veerappa (ISRO, Bangalore, India)

12:10 CT19 The ultraviolet imaging telescope on-board AstroSat: recent results
by Dr. Chelliah Subramonian Stalin (IIA, Bangalore, India)

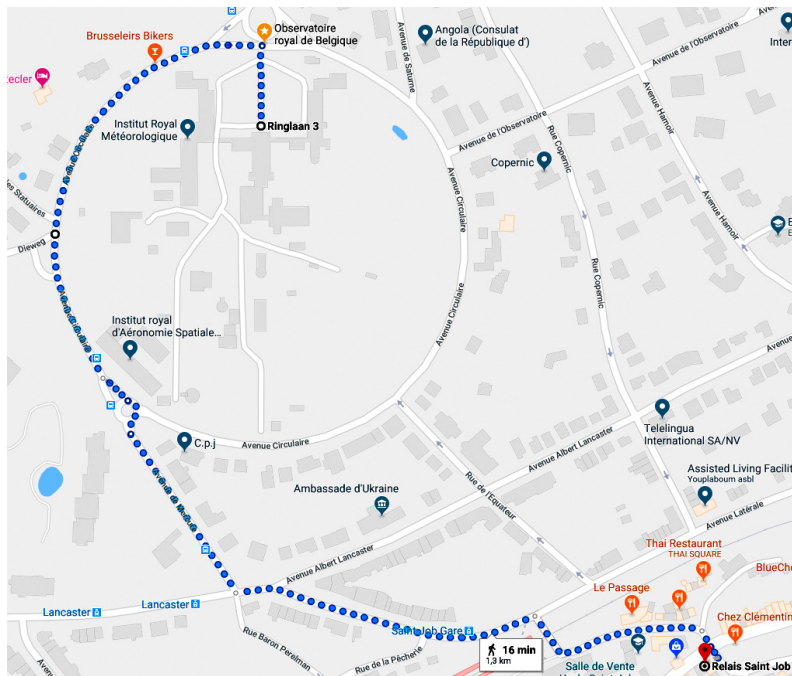
12:30 CT20 Spectroscopic view on the pulsating A-type stars HD 73045 and HD 118660
by Dr. Eugene Semenko (SAO, Nizhnii Arkhyz, Russia)

12:50 **Workshop picture**

13:10 **Lunch break**

SOCIAL EVENTS:

- 14:30 **Tour of Brussels**
- 18:15 **Tour of Royal Observatory of Belgium**
- 19:30 **Workshop dinner**
restaurant: Relais Saint Job
address: Place de Saint-Job 1, Uccle/Ukkel



- 22:30 **End of day 3**

FRIDAY 12/10/2018

- 09:00 **Start of day 4** (Meridian room opens)

(chair: Prof. Ram Sagar)

- 09:30 CT21 Stellar and galactic studies with the 2-m Himalayan Chandra Telescope by Prof. Aruna Goswami (IIA, Bangalore, India)
- 09:50 CT22 Spectroscopic studies of carbon-enhanced metal-poor stars by Ms. Meenakshi Purandardas (IIA, Bangalore, India) (presented by Prof. Aruna Goswami)
- 10:10 CT23 Probing the Galactic s-process nucleosynthesis using metal-deficient Barium stars by Ms. Shejeelammal Jameela (IIA, Bangalore, India)
- 10:30 CT24 Probing high-mass star-formation in the outflow source G12.42+0.50 by Prof. Anandmayee Tej (IIST, Thiruvananthapuram, India)
- 10:50 CT25 High-mass star formation toward the southern infrared bubble S10 by Mr. Swagat Ranjan Das (IIST, Thiruvananthapuram, India) (presented by Prof. Anandmayee Tej)
- 11:10 **Coffee/Tea break**

- 11:30 CT26 Optical and X-ray observations of three candidate polars: RX J0859.1+0537, RX J0749.1-0549, and RX J0649.8-0737
by Ms. Arti Joshi (ARIES, Nainital, India)
- 11:50 CT27 Ground-based photometric survey to search for the pulsational variability in Ap and Am Stars
by Dr. Santosh Joshi (ARIES, Nainital, India)
- 12:10 CT28 The spectroscopic survey of southern oEA stars
by Dr. David Mkrtichian (NARIT, Chiang Mai, Thailand)
- 12:30 CT29 Prospects for radio observations of Particle-Accelerating Colliding-Wind Binaries with the Giant Metrewave Radio Telescope
by Dr. Michaël De Becker (STAR, ULiège, Belgium)
- 12:50 CT30 Understanding physical properties of M-dwarfs: near-infrared (HK band) spectroscopic studies
by Mr. Dhrimadri Khata (SNBNCBS, Kolkata, India)
(presented by Dr. Soumen Mondal)
- 13:10 **Lunch break**

Session 3.3: Extragalactic astronomy with other telescopes of interest

(chair: Prof. Gopal Krishna)

- 14:30 IR11 Multi-wavelength extragalactic astronomy
by Prof. Maarten Baes (UGent, Ghent, Belgium)
- 15:10 CT31 DustKING - the story continues: dust attenuation in NGC628
by Ms. Marjorie Declerck (UGent, Ghent, Belgium)
- 15:30 CT32 Multi-wavelength variability and quasi-periodic oscillations in Blazars
by Dr. Alok Chandra Gupta (ARIES, Nainital, India)
(skype presentation)
- 15:50 **Coffee/Tea break**

SESSION 4: WORKSHOP SUMMARY & CLOSING CEREMONY

(chair: Prof. Harinder Singh)

- 16:10 IR12 Workshop summary with some thoughts on the future expectations
by Prof. Philippe Prugniel (Observatoire de Lyon, Lyon, France)
- 16:50 Closing ceremony
- 17:00 **End of day 4**



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POSTER PRESENTATIONS

- P01 On the requirement for a high resolution spectrograph to investigate the multiplicity of massive stars with the 3.6-m Devasthal Optical Telescope
by Dr. Michaël De Becker (STAR, ULiège, Belgium)
- P02 Characterization of pre-main sequence population in H II region Sh2-242
by Mr. Alik Panja (SNBNCBS, Kolkata, India)
(presented by Dr. Soumen Mondal)
- P03 Spectral calibration of cool stars: a new medium-resolution HK-band HCT TIRSPEC spectral library
by Mr. Supriyo Ghosh (SNBNCBS, Kolkata, India)
(presented by Dr. Soumen Mondal)
- P04 A search for fast photometric variability of very low mass stars in IC 348
by Mr. Samrat Ghosh (SNBNCBS, Kolkata, India)
(presented by Dr. Soumen Mondal)
- P05 Photometric study of three W UMa type variable stars
by Mr. Alaxender Panchal (ARIES, Nainital, India)
(presented by Dr. Yogesh Joshi)
- P06 Linear polarization towards anti-galactic direction: a case of the open star cluster Alessi1
by Ms. Sadhana Singh (ARIES, Nainital, India)
(presented by Ms. Arti Joshi)
- P07 Polarization study of massive binaries with the 1.04-m ARIES telescope
by Ms. Arora Bharti (ARIES, Nainital, India)
(presented by Ms. Arti Joshi)
- P08 Photometric study of the open clusters NGC 381 and King 21
by Mr. Jayanand Maurya (ARIES, Nainital, India)
(presented by Dr. Yogesh Joshi)