

Programme

2011 Autumn School
Principles of Multi-wavelength
High-Time Resolution Astrophysics (HTRA)

October 10–15, 2011, Santa Margherita di Pula, Sardinia, Italy
www.htra.ie
info@htra.ie

Invited speakers

Mauro Barbieri (Observatoire de la Cote d'Azur)
Tomaso Belloni (OAB-INAf)
Lucas Guillemot (Max-Planck-Institut für Radioastronomie)
GianLuca Israel (OAR-INAf)
Simon Jeffery (Armagh Observatory)
Sandro Mereghetti (IASF-INAf, Milan)
Giampiero Naletto (University of Padua)
Pablo Saz-Parkinson (Santa Cruz Institute for Particle Physics)
Daniel Steeghs (University of Warwick)
Nial Tanvir (University of Leicester)
Joachim Trümper (Max Planck Institute for Extraterrestrial Physics)
Marco Feroci (IASF-INAf, Rome)

SOC

Roberto Mignani (UCL–MSSL)

Andy Shearer (National University of Ireland, Galway)

Agnieszka Słowikowska (University of Zielona Góra)

Arne Rau (Max Planck Institute for Extraterrestrial Physics)

Gottfried Kanbach (Max Planck Institute for Extraterrestrial Physics)

Andrea Possenti (INAF–OAC)

Nichi D’Amico (The University of Cagliari)

Luciano Burderi (The University of Cagliari)

LOC (INAF–OAC)

Marta Burgay

Alessandro Corongiu

Paolo Esposito

Noemi Iacolina

Sabrina Milia

Silvia Casu

Antonietta Fara

1 DAY 1, 10 Oct 2011
OBJECT REVIEW, OBSERVATIONS AND THEORY

08:45–09:00 Welcome, introduction, and goals (Roberto Mignani)

09:00–09:45 Periodic and aperiodic variability in astrophysics, multi-wavelength HTRA (Andrew Shearer)

09:45–10:30 Pulsars and neutron stars (Joachim Trümper)

10:30–10:45 Student rapporteur, feedback session, and questions

— Coffee break —

11:00–11:45 X-ray binary systems (Tomaso Belloni)

11:45–12:30 CVs and ultra compact binaries (Daniel Steeghs)

12:30–12:45 Student rapporteur, feedback session, and questions

— Lunch break —

14:00–14:45 Galactic transients (Luciano Burderi)

14:45–15:30 Stellar oscillations and astroseismology (Simon Jeffery)

15:30–15:45 Student rapporteur, feedback session, and questions

— Coffee break —

16:00–16:45 Planetary transits and occultations (Mauro Barbieri)

16:45–17:30 Gamma ray bursts (Nial Tanvir)

17:30–17:45 Student rapporteur, feedback session, and questions

2 DAY 2, 11 Oct 2011

TIMING, DATA ANALYSIS TECHNIQUES, STATISTICS

09:00–09:45 Time frames, leap seconds, GPS (Andy Shearer)

09:45–10:30 Absolute timing — barycentric correction/orbit correction, other effects (Andrea Possenti)

10:30–10:45 Student rapporteur, feedback session, and questions

— Coffee break —

11:00–11:45 Periodicity search — fast Fourier transform (GianLuca Israel)

11:45–12:30 Timing statistics, sources of timing noise, and power spectrum analysis (GianLuca Israel)

12:30–12:45 Student rapporteur, feedback session, and questions

— Lunch break —

14:00–14:45 Periodicity search — folding (Giampiero Naletto)

14:45–15:30 Coherent analysis (Luciano Burderi)

15:30–15:45 Student rapporteur, feedback session, and questions

— Coffee break —

16:00–16:45 Statistical analysis 1 (Lucas Guillemot)

16:45–17:30 Statistical analyses 2 (Pablo Saz-Parkinson)

17:30–18:30 Poster presentation and poster session

3 DAY 3, 12 Oct 2011

MULTI-WAVELENGTH METHODOLOGY, INSTRUMENTS, AND DETECTORS

09:00–09:45 Radio (Andrea Possenti)

09:45–10:30 Optical (Roberto Mignani)

10:30–10:45 Student rapporteur, feedback session, and questions

— Coffee break —

11:00–11:45 X-rays (Sandro Mereghetti)

11:45–12:30 Gamma-rays (Gottfried Kanbach)

12:30–12:45 Student rapporteur, feedback session, and questions

— Lunch break —

14:00–14:45 Radio HTRA instruments/detectors (Marta Burgay)

14:45–15:30 Optical HTRA instruments/detectors (Agnieszka Słowikowska)

15:30–15:45 Student rapporteur, feedback session, and questions

— Coffee break —

16:00–16:45 X-rays HTRA instruments/detectors (Sandro Mereghetti)

16:45–17:30 Gamma-rays HTRA instruments/detectors (Gottfried Kanbach)

17:30–17:45 Student rapporteur, feedback session, and questions

18:00–19:00 **Special lecture by Marco Feroci “The Large X-ray Observa-
tory For Timing”**

4 DAY 4, 13 Oct 2011

09:00–09:30 Radio data format (Marta Burgay/Alessandro Corongiu)

09:30–10:00 Optical data format (Agnieszka Słowikowska)

10:00–10:30 X-ray data format (Paolo Esposito)

10:30–11:00 Gamma-ray data format (Lucas Guillemot/Pablo Saz-Parkinson)

— Coffee Break —

11:15–13:15 Radio timing analysis tools/tutorials (Marta Burgay/Alessandro Corongiu)

— Lunch Break —

14:15–16:15 X-ray timing analysis tools/tutorials (Paolo Esposito)

— Coffee Break —

16:30–18:30 Gamma-ray timing analysis tools/tutorials (Lucas Guillemot)

5 DAY 5, 14 Oct 2011 PRACTICAL SESSIONS

09:00–11:00 Radio data analysis

— Coffee Break —

11:15–13:15 X-ray data analysis

— Lunch Break —

14:15–16:15 Gamma-ray data analysis

— Coffee Break —

16:30–18:30 Result presentation and discussion

— End of School —