

## Filippo Frontera



Position: Contract Professor University of Ferrara and Associated scientist INAF-IASF Bologna  
Period covered: Jan- November 2016

### I Scientific Work

Experimental and observational X-/gamma-ray astronomy, in particular:

- a. Gamma-ray lens development with long focal length (LAUE project);
- b. Studies of new satellite missions
- c. Observational studies of GRB prompt emission;
- d. Observational review on hard X-ray astronomy.

### II Conferences and educational activities

#### *II a. Conferences and Other External Scientific Work*

- a. *Outreaching talk, Lamezia Terme (Calabria), 16 April 2016*
- b. *Invited talk at a Medical conference in Crotona, 13-16 October 2016*
- c. *Invited talk at the Conference of Italian Astronomical Society (SAIT), Rome, 3 May 2016*
- d. *Invited talk at the Twenty Year Anniversary of the BeppoSAX launch, ASI Rome, 2 May 2016*
- e. *Invited Talks at the HXMT workshop on high energy astrophysics, Beijing (China), 12-15 July 2016*

#### *II b. Work With Students*

*yes, with*

- a) *2 PhD students (Disha Sawant and Tais Maiolino), EMJD-IRAP-PhD program*

#### *II c Other Teaching Duties*

*A Master course at UNIFE, on "Measures and Observations of Celestial X- and gamma-rays" to Master Students in Physics.*

#### *II d. Work With Postdocs*

*Yes, with 1 PostDoc: E.Virgilli at the Physics and Earth Sciences Department, University of Ferrara*

### **III. Service activities**

*III a. member of the IRAP-PhD Faculty*

### **IV. Other**

*None*

### **2016 List of Publications**

- Virgilli, E.; Frontera, F.; Rosati, P.; Bonnini, E.; Buffagni, E.; Ferrari, C.; Stephen, J. B.; Caroli, E.; Auricchio, N.; Basili, A.; Silvestri, S., *Focusing effect of bent GaAs crystals for  $\gamma$ -ray Laue lenses: Monte Carlo and experimental results*, Experimental Astronomy, Volume 41, Issue 1-2, pp. 307-326 (2016)
- Frontera, Filippo; Amati, Lorenzo; Farinelli, Ruben; Dichiara, Simone; Guidorzi, Cristiano; Landi, Raffaella; Titarchuk, Lev, *Possible physical explanation of the intrinsic  $E_p$ - $i$  “intensity” correlation commonly used to “standardize” GRBs*, International Journal of Modern Physics D, Volume 25, Issue 5, id. 1630014 (2016)
- Dichiara, S.; Guidorzi, C.; Amati, L.; Frontera, F.; Margutti, R., *VizieR Online Data Catalog: GRBs  $E_p$  and Fourier PDS slope correlation (Dichiara+, 2016)*, VizieR On-line Data Catalog: J/A+A/589/A97. Originally published in: 2016A&A...589A..97D
- Dichiara, S.; Guidorzi, C.; Amati, L.; Frontera, F.; Margutti, R., *Correlation between peak energy and Fourier power density spectrum slope in gamma-ray bursts*, Astronomy & Astrophysics, Volume 589, id.A97, 10 pp (2016)
- Ukwatta, T. N.; Hurley, K.; MacGibbon, J. H.; Svinkin, D. S.; Aptekar, R. L.; Golenetskii, S. V.; Frederiks, D. D.; Pal'shin, V. D.; Goldsten, J.; Boynton, W.; Frontera, F.; and 14 coauthors, *Investigation of Primordial Black Hole Bursts Using Interplanetary Network Gamma-ray Bursts*, The Astrophysical Journal, Volume 826, Issue 1, article id. 98, 14 pp. (2016).