# Report for the Short Visit Grant Interfaces between WG C2 Astrometry Reference Frame and WG C3 Quasars: improving GREAT activity/action

*Turin-Italy, March 5-9, 2012*

**Purpose of the visit**

To seed collaboration between WGC2 Astrometry Reference Frame and WGC3 Quasars GREAT working groups, the main aim to coadd scientific value in the exploitation of the Gaia potential. The applicants are co-facilitators of the two groups.
Gaia will survey with unprecedented accuracy approximately 500,000 QSOs, largely new detections. Besides the implications for QSO science, this sample will allow the best materialization ever of a reference frame, providing astrometry with the potential for testing General Relativity and probing modern Cosmology. These subjects were discussed at the GREATESF workshop "QSO Astrophysics, Fundamental physics, and Astrometric Cosmology in the Gaia era", last June. This meeting helped in starting/improving interexperiment and interdomain collaborations, and the planned visits are now to make the most of the generated momentum.

**Description of the work carried out during the visit**

The GREATESF workshop was considered for publication in the Memorie della Societa Astronomica Italiana. The working week was devoted to assemble the contributions in order to finalize the volume of the proceedings and to envisage further steps that put in action the emerging ideas and the received feedback. Since most of the editors are working in Italy (Alexandre Andrei, Mario Lattanzi and Mariateresa Crosta), Sonia Anton was hosted in OATo, Turin.

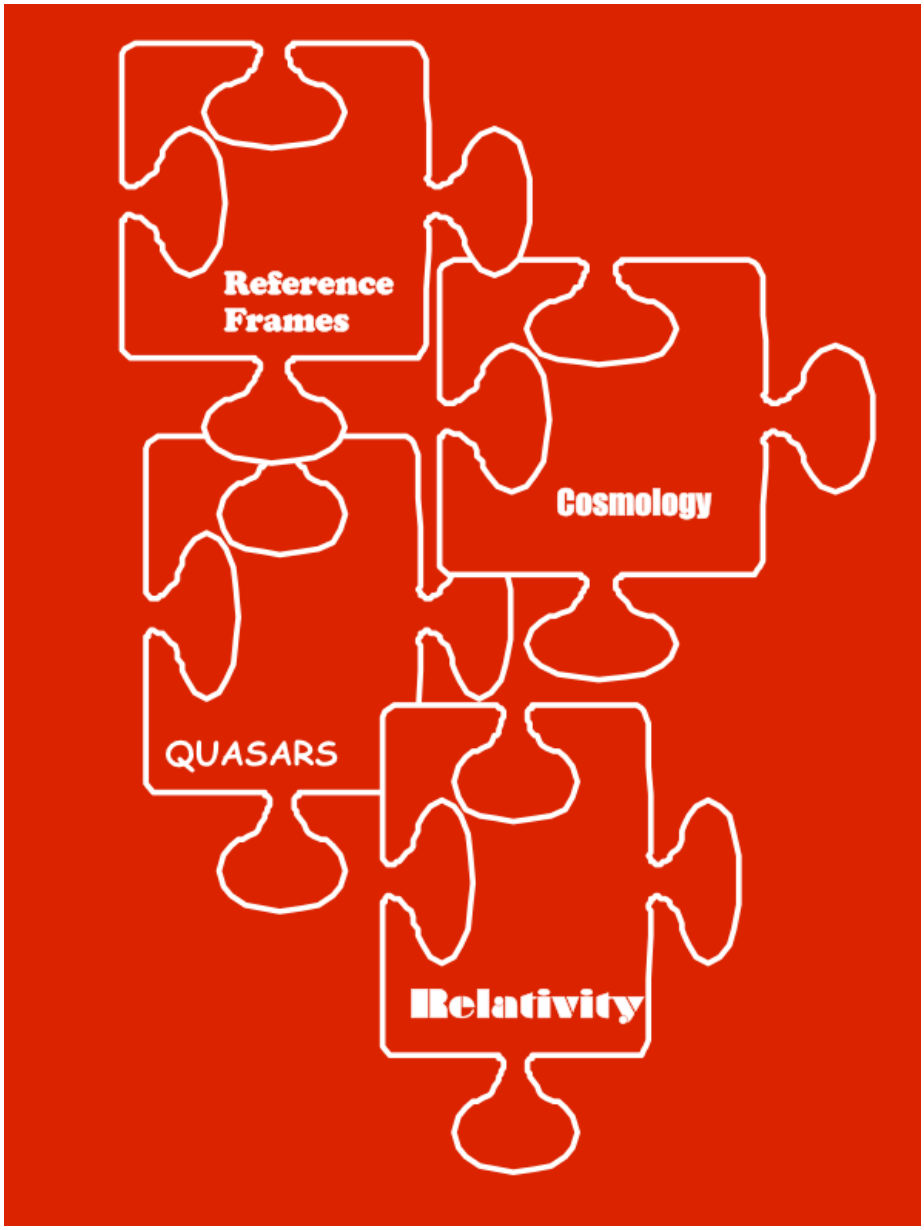
**Description of the main results obtained**

The book of proceedings is composed by 32 papers, where 13 are review papers, 17 are contributed talks and 2 are posters see the index of the papers in the end of this document.

**Future collaboration with host institution (if applicable)**

In order to keep the stimulated bridges between participants from different backgrounds, we planned a second visit, that will be centered (i) on the preparation of the proposal for those ideas that have been selected according to the spirit of the above GREAT working groups, and (ii) on the coordination of the related projects that we wish to implement, as continuation of the workshop. Specifically: an international school on the methods of Relativistic Astrometry and a meeting on Reference FrameQSO. Mariateresa Crosta will be hosted in Portugal.

to appear in Memorie della Societa' Astronomica Italiana, Vol 83 n. 3



# QSO Astrophysics, Fundamental physics, and Astrometric Cosmology in the Gaia era

*Porto-Portugal, June 6-9, 2011*

## Scientific Organizing Committee

Alexandre Andrei (INAF-OATo/ON-MCT),
Sonia Antón (Univ. Porto),
Orfeu Bertolami (Univ. Porto),
Geraldine Bourda (Obs. Bordeaux),
Ian Browne (Univ. Manchester),
Patrick Charlot (Obs. Bordeaux),
Mariateresa Crosta (INAF-OATo),
Fernando de Felice (Univ. Padova),
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Mario Lattanzi (INAF-OATo),
Christophe Le Poncin-Lafitte (Obs. Paris),
Francois Mignard (Obs. Cotł d'Azur),
José Osório (Univ. Porto)

## Local Organizing Committee

Sonia Antón (Univ. Porto),
Orfeu Bertolami (Univ. Porto),
Geraldine Bourda (Obs. Bordeaux),
Bruno Coelho (Univ. Porto),
Mariateresa Crosta (INAF-OATo),
José Osório (Univ. Porto),
Dalmiro Maia (Univ. Porto)

## Organising Institute

Centro de Investigação em Ciências Geo-Espaciais,
Osservatorio Astronomico di Torino, INAF

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Departamento de Física e Departamento de Geociências, Ambiente e Ordenamento do Território, da FCUP

**QSO astrometry in the context of observational astrophysics**



**QSO and the Reference Frame**

**Reference Frame and the fabric of Space-Time**

**Astrometric Cosmology**



**Epistemology Implications of current theories of the Universe**