



## AHEAD WP9 Assessment of gamma-ray experiments

The European Gamma-Ray community has a long and successful record in designing, realizing and observing with space observatories.

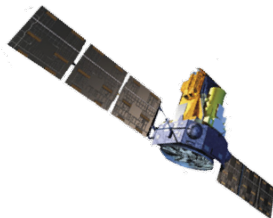
In order to improve the chances of a future gamma-ray astrophysics mission, AHEAD/WP9 will develop tools that enable performance evaluation, for the selection and further development of an instrument concept, based on state of the art technologies, to be proposed for the next generation of gamma-ray observatory.



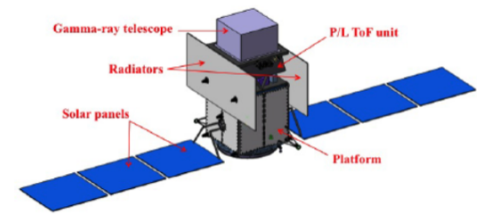
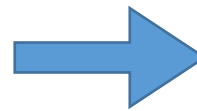
SIGMA  
1989-1994/8



COMPTEL  
1991-1999



INTEGRAL  
2002 - ...



ASTROGAM+ (tbc)  
2025 ? - ...



**AHEAD**

**Integrated Activities for the High Energy Astrophysics Domain**



Funded by the Horizon 2020  
Framework Programme of the European Union

## **WP9 working groups**

Various sub-groups worked sequentially to achieve the goals of WP9 :

### **Science Advisory Group (SAG)**

Lorenzo Amati, INAF Bologna; Lorraine Hanlon, UC Dublin; Jordi Isern, CSIC-IEEC Barcelona; Aldo Morselli, INFN Rome; Uwe Oberlack, Uni Mainz; Nicolas Prantzos, IAP Paris; Constanca Providencia, ILL Coimbra; Piero Rosati, INFN Ferrara; Regis Terrier, APC Paris; Peter von Ballmoos, IRAP Toulouse

### **Instrument Working Group (IWG) of WP9**

Ezio Caroli, INAF/IASF-Bologna; Filippo Frontera, INFN Ferrara; Gerry Skinner; Margarida Hernanz, CSIC-IEEC Barcelona; Gottfried Kanbach, MPE Garching; Vincent Tatischeff, CSNSM Orsay; Peter von Ballmoos, IRAP Toulouse

### **Simulation Working Group (SWG)**

Laboratories involved in the modeling the selected instrument concepts include: IRAP Toulouse, CSNSM Orsay, APC Paris, CEA Saclay, UCD Dublin, CSIC-IEEC Barcelona, INFN Roma Tor Vergata, LIP Coimbra, University of Ferrara



## **What is WP9 about ?**

**1) Prioritize  $\gamma$ -ray science objectives (SAG)**

**2) Define mission requirements (IWG)**

**3) AO for instrument concepts (IWG)**

**4) Select instrument concepts (IWG)**

**5) Simulate instrument concepts (SWG)**

**6) Discuss and valorize results (SWG) -> WORKSHOP**

12th INTEGRAL Conference and 1st AHEAD gamma-ray workshop (early 2019)

## INTEGRAL looks AHEAD to Multi-Messenger Astrophysics

objective : obtain a REAL Multi-Messenger attendance !



city  
Geneva



"middle" mountain  
Diablerets



Alpine  
Saas-Fee  
Mürren



# More on locations

- Decided to postpone it to January 2019 in Switzerland to have some results from LVC O3
- Co-organized AHEAD workshop on future gamma-ray missions (one day)
- If on mountains, we can make a morning and late afternoon sessions to allow for ski break (Monday afternoon to Friday morning 3 full days)
- Locations (estimated fee 400 CHF, except Geneva):
  - Geneva, close to airport, conference at University, 200 CHF fee
  - Les Diablerets: 2,5 hours from Geneva airport, 1100 m.sl. (only 14 January slot)
  - Champéry: 2,5 hours from Geneva airport, 1100 m.sl.
  - Saas Fee: 3.5 hours from Geneva airport, 1600 m.s.l. (no cars)
  - Murren: 4 hours from Geneva airport (3 Zurich), 1800 m.s.l. (no cars) Positive course outcome
- Hotels are 100 CHF/night, train from Geneva from 100 to 200 CHF return ticket.

