

Working Agreement Concerning Participation
in the Operating Collaboration Fund
of The Large Area Telescope on the
Gamma-Ray Large Area Space Telescope Mission

February 21, 2006

GLAST International Finance Committee

Stanford Linear Accelerator Center

1. Introduction

This document is a Working Agreement (Agreement) concerning the Participation in the Operating Collaboration Fund (OCF) of The Large Area Telescope (LAT) on the GLAST Mission. This Agreement among the parties signing below covers the setting-up, including categories of allowed expenditures, and monitoring of the GLAST LAT Operating Collaboration Fund.

This Agreement is expected to be maintained for the life of the GLAST LAT Collaboration (Collaboration). This Agreement is not a contract but is an understanding, among all the members of the GLAST LAT IFC (IFC) who will be committing resources to the GLAST LAT Operating Collaboration Fund (OCF).

2. Scope of the Agreement

2.1 The parties to this agreement agree that the IFC has the responsibility of approving categories of operating items that can be supported by the Operating Collaboration Fund. Within these approved categories, the GLAST LAT Principal Investigator (PI)/Spokesperson will present a calendar year budget to the IFC at the spring meeting. Also on an annual basis, the PI will present a budget projection for the two upcoming years to facilitate financial planning by the parties to this agreement.

2.2 This approved annual budget will be funded by the contributing IFC members. The fraction of the OCF contributed by the agencies of a nation, Shared Number or SN, is in proportion to the number of LAT Collaboration members sponsored by that nation. In particular, the Collaboration has several membership categories, namely full Members, Affiliated Scientists, post-docs, and graduate students. The fractional amount of the OCF for a country is proportional to the number of 'equivalent collaborators' from a country (also referred to as a 'share') which is calculated as the sum of the number of full Members, the number of post-docs and 20% of the number of Affiliated Scientists.

It is agreed by the members of IFC that the number of graduate students will not be included in the calculation of shares. The number of equivalent collaborators for assessing the OCF contribution will be determined by the number of collaborators at the start of the autumn quarter preceding the start of the OCF year (Calendar Year). The membership numbers will be determined from the Collaboration membership list maintained by the Collaboration Senior Scientist Advisory Committee (SSAC) and will be updated annually. The chair of the SSAC will provide the list of full members, post docs, and affiliated scientists in advance of the autumn IFC meeting, when the annual budget is ratified.

2.3 The approved annual budget will be included in the minutes of the IFC meetings.

2.4 The parties to this Agreement agree that the OCF will begin approximately one year preceding the official launch date. Given that the current launch date is approximately

August 2007, the tentative start date of the OCF will be set at July 1, 2006. The agreed upon maximum value per equivalent collaborator or share value (SV) will be US Dollar \$6,500 per annum for this first year. Operational commissioning of the Large Area Telescope will be the main activity for the year preceding the launch.

- 2.5 The parties to this Agreement agree that it is the responsibility of the IFC to ratify the proposed budget as well as the fractional contributions to the OCF. This ratification process will be held in the autumn IFC meeting to be effective for the following calendar year.
- 2.6 The GLAST LAT Principal Investigator must seek pre-approval from the IFC if there is a need to spend the OCF on categories not on the pre-determined list. It is agreed that a meeting by IFC is not required to approve this type of change request. Amendments to this Agreement will also not be needed.

When the IFC meets subsequent to this change event, the specifics of the change request as well as its approval will be acknowledged in the IFC meeting minutes. The minutes, in which changes such as these are noted, will serve as the official document.

- 2.7 Title to items purchased by Stanford University - SLAC (SU-SLAC), using Collaboration Fund monies, that are part of the approved OCF budget, will vest in the Department of Energy (DOE) at the moment of purchase, and DOE will retain all right, title, and interest in such items until the completion or termination of the GLAST Mission. All such items shall be used by DOE only and solely in furtherance of the purposes of the GLAST LAT Collaboration.
- 2.8 Collaboration concerning and participation in the science program of the GLAST LAT Collaboration, and all of the benefits that may derive there from, are deemed valuable consideration to the Collaboration Fund parties and funding agencies, constituting adequate and sufficient compensation for their provision of Collaboration Fund items to DOE.
- 2.9 Upon completion or termination of the GLAST Mission, DOE may abandon the Collaboration Fund items purchased by SU-SLAC in place, at which point SU-SLAC may dispose of same in a manner agreeable to the IFC funding agencies.

A special discounted indirect cost rate of 13% will be charged to OCF costs incurred as labor, materials or services costs. This charge is to cover the general & administrative costs (G&A) at SU-SLAC.

3. Participation

- 3.1 In accordance with the agreement made between the parties, each contributing party will pay the amount agreed to upon ratification of the OCF budget. Payment by DOE shall come as the annual operating budget through the annual DOE High Energy Physics (HEP) budget at SU-SLAC. Payment by NASA shall be part of the NASA

Phase E funding to the GLAST LAT project through the contract with Stanford University. ASI is required by law to meet its obligations through in-kind contributions, rather than in cash. All other payments shall be made as cash in US dollars except as noted in 3.3, 3.4, and 3.5 below.

- 3.2 As appropriate, invoices to contributing agencies will be sent out annually in accordance with the fractional shares. It is expected that payments will be made promptly, but in no case later than 90 days after receipt of an invoice. Costs of items against GLAST LAT OCF budget will be monitored and reported to the IFC on a semi-annual basis.
- 3.3 The commitments will be met by the parties on a best-efforts basis. Any change to these commitments will require an amendment to be made to the present agreement. Reductions shall only be considered if there arise a compelling reason such as a major change in the funding available at government, or funding authority level. Failure to meet agreed-to financial obligations will be referred to the IFC.
- 3.4 A party may, by agreement with the GLAST IFC, provide one or part of one of the common items, as part of their contribution to the Collaboration "in kind". In this case, a proposal will begin as a bilateral discussion with the GLAST IFC chair. The chair will bring forward such proposal to the IFC for discussion at the spring meeting and approval at the autumn meeting, or as otherwise agreed upon by the IFC. A record of the expenditure will be included for the Collaboration Fund when the value of the contribution is reviewed and validated by the GLAST IFC.
- 3.5 Contributions, either in cash or in kind, will be accounted by the following algorithm. This provides for the possibility that partners may wish to provide contributions "up-front" allowing credits for a future year:

$EC = SN \times SV$ (Effective Contribution defined for the current year),

$Cr = C - EC$ (Credit usable the following year),

$SN =$ Share Number [specified in Section 2.2],

$SV =$ Share Value [specified in Section 2.4].

$C =$ Contribution agreed-upon in the autumn IFC meeting

4. GLAST OCF Budget

The initial OCF budget will cover costs in the categories listed below. The OCF budget will be prepared annually by the GLAST LAT management and reviewed and ratified annually by the IFC.

- a) *ISOC Support Staff*: Funding for Programmer and Technician support for Operations Planning & Commanding and Health & Safety Monitoring.
- b) *Computing*: Data storage media (e.g. RAID disks; tapes) for Level-1 pipeline production data; desktop computing support for collaborators resident at SU-SLAC.
- c) *Publication Costs*
- d) *Living expenses for collaborators, located at SU-SLAC, with key operations phase responsibilities*: This includes local living expenses, while in residence at SU-SLAC, for the Analysis Coordinator and the Science Working Group co-leads.

5. Execution

5.1 *Effective Dates*

This Working Agreement shall become effective upon the later signature of the approving parties. It shall remain in effect until October 31, 2013, or until superseded, whichever occurs first.

5.2 **Approvals**

The undersigned concur on the terms of this Working Agreement:

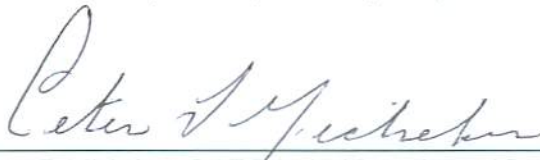

Date 23.03 2006
Per Carlson, Swedish GLAST Consortium, Sweden



Date 07.07.2006
Simonetta Di Pippo, Director, ASI OSU, Italy


Date 3/20/06
Jonathan Dorfan, Director, SLAC, USA


Date 3/17/06
Persis Drell, IFC Chairman, SLAC, USA


Date 22.07.06
Jean Zinn Justin, Director, DAPNIA, CEA, France


Date 14/03/06
Peter F. Michelson, LAT Principal Investigator / Spokesperson,
Stanford University, USA


Date 27/04/06
Roberto Petronzio, President, INFN, Italy


Date 01/03/06
Michel Spiro, Director, IN2P3, France


Date 24/07/2006
Takashi Ohsugi, University of Hiroshima, Japan