GammaLib - Feature #2290

Add methods to support csresspec in ctools

12/12/2017 11:52 AM - Tibaldo Luigi

Status:	Closed		**Start date:**	12/12/2017
Priority:	Normal		**Due date:**	
Assigned To:	Tibaldo Luigi		**% Done:**	100%
Category:			**Estimated time:**	0.00 hour
Target version:	1.5.0			

Description

Some low-level functionalities are needed to support the creation of csresspec ([[https://cta-redmine.irap.omp.eu/issues/2289]]):
- collapse GSkyMap over spatial dimensions to produce energy array
- extract Gamma and Background Counts (TBD)

History

#1 - 12/13/2017 09:32 AM - Knödlseder Jürgen

- Target version set to 1.5.0

#2 - 12/14/2017 09:22 AM - Tibaldo Luigi

- Status changed from New to In Progress

- % Done changed from 0 to 70

Implemented:
- in GSkyMap: total_counts and total_flux methods to sum or integrate over a map/set pf maps
- in GCTAOnOffObservation: model_gamma and model_background that given a model container return a Pha object with the corresponding predicted counts for the observation; this required to excise the WSTAT likelihood profiling out of the full likelihood_wstat function (wstat_value), so that it can be used to derive the background counts for WSTAT for a single bin without all the other tasks to do an optimization (Hessian, etc).
All that is needed for csresspec is in place, but I'll leave this open in case anything else pops out.

#3 - 12/19/2017 02:55 PM - Tibaldo Luigi

- Added method to extract data from GPha as GNdarray
- Added method to calculate sign of GNdarray

#4 - 12/19/2017 02:56 PM - Tibaldo Luigi

- Also added methods to multiply and divide GNdarray by other GNdarray

#5 - 12/19/2017 04:56 PM - Tibaldo Luigi

Added method to clip skymap at threshold

#6 - 12/20/2017 10:34 PM - Tibaldo Luigi

Added method to extract backscal as GNdarray

#7 - 01/08/2018 12:51 PM - Tibaldo Luigi

- Status changed from In Progress to Pull request

Work completed and ready for integration on my side.

#8 - 01/09/2018 02:28 PM - Knödlseder Jürgen

- Status changed from Pull request to Closed

- % Done changed from 70 to 100

I merged the code into devel.

I renamed the methods GSkyMap::total_flux() and GSkyMap::total_counts() to GSkyMap::flux() and GSkyMap::counts() since a GSkyMap::flux() method with different arguments existed already, and the current GammaLib logic is to overload methods with the same name if they provide the same kind of functionality.