GammaLib - Change request #2343

Change GCTABackground3D to support different column names

02/23/2018 10:20 AM - Tiziani Domenico

Status:	Closed	**Start date:**	02/23/2018
Priority:	Normal	**Due date:**	
Assigned To:	Knödlseder Jürgen	**% Done:**	100%
Category:		**Estimated time:**	0.00 hour
Target version:	1.6.0		

Description

Right now, GCTABackground3D is initialised with background information from a column with the hardcoded name "BGD":
m_inx_bgd = m_background.table("BGD");

However, specifications for gamma-ray data formats suggest "BKG":
http://gamma-astro-data-formats.readthedocs.io/en/latest/irfs/full_enclosure/bkg/index.html#bkg-3d

Maybe this class should be changed to support multiple column names.

History

#1 - 02/23/2018 12:18 PM - Knödlseder Jürgen

- Target version set to 1.5.1

I agree that the class should support both column names.

#2 - 03/26/2018 02:39 PM - Knödlseder Jürgen

- Target version changed from 1.5.1 to 1.6.0

#3 - 07/31/2018 01:57 PM - Knödlseder Jürgen

- Status changed from New to In Progress

- Assigned To set to Knödlseder Jürgen

- % Done changed from 0 to 10

Here the places where BGD is explicitly hardcoded in GammaLib:

```
inst/cta/src/GCTABackground3D.cpp:    m_inx_bgd    = m_background.table("BGD");
inst/cta/src/GCTAResponseIrf.cpp:       bgdname = m_caldb.filename("","","BGD","","",expr);
```

The code in GCTABackground3D refers to a column name in the background response table, the code in GCTAResponseIrf refers to the name in the caldb index. For the later, the handling of a BKG is already supported.

And here the places where BGD is explicitly hardcoded in ctools:

```
cscripts/csobs2caldb.py:        table['CAL_CNAM'][row] = 'BGD'
cscripts/csroot2caldb.py:        names = ['EA', 'PSF', 'EDISP', 'BGD']
cscripts/csroot2caldb.py:        # Create "BGD" data column
cscripts/csroot2caldb.py:        self._make_3D(array, ds['HDU_BGD'], 'BGD', '1/(MeV s sr)')
test/test_csobs2caldb.py:        bgd   = gammalib.GFilename(db.filename(",",'BGD',",",expr))
test/dev/cta_kb_root2caldb.py:        self.bgd_name     = "BGD"
```

#4 - 07/31/2018 02:34 PM - Knödlseder Jürgen

- % Done changed from 10 to 30

I changed GCTABackground3D so that it now first searches for a response table with name BKG, and only if such a table does not exit, searches for a table with name BGD. This assures backwards compatibility with old calibration files.

I also updated all keywords in the calibration files from BGD to BKG, and made also the background units compliant with astropy.

#5 - 07/31/2018 04:04 PM - Knödlseder Jürgen

- Status changed from In Progress to Pull request

- % Done changed from 30 to 100

I also changed the ctools code. All BGD are now replaced by BKG.

#6 - 07/31/2018 05:56 PM - Knödlseder Jürgen

- Status changed from Pull request to Closed

Merged into devel.