# ctools - Change request #2295

## Use CTA time reference in obsutils for observation creation

01/09/2018 03:12 PM - Knödlseder Jürgen

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|---|---|---|---|---|
| **Status:** | Closed | | **Start date:** | 01/09/2018 |
| **Priority:** | Normal | | **Due date:** | |
| **Assigned To:** | Knödlseder Jürgen | | **% Done:** | 100% |
| **Category:** | | | **Estimated time:** | 0.00 hour |
| **Target version:** | 1.5.0 | | | |

### Description

So far, the following code produces an observation with a reference time at the GammaLib time reference:

```
>>> import gammalib
>>> import ctools
>>> from cscripts import obsutils
>>> obs = obsutils.set_obs(gammalib.GSkyDir(),0.0,1800.0,1.0,1.0,100.0,5.0,'South_50h','prod2','')
>>> print(obs.gti())
=== GGti ===
 Number of intervals .......: 1
 Ontime ....................: 1800 sec
 Elapsed time ..............: 1800 sec
 MJD range .................: 55197.0007660185 - 55197.0215993519 s (TT)
 UTC range .................: 2010-01-01T00:00:00 - 2010-01-01T00:30:00 s (TT)
 Reference MJD .............: 55197.0007660185
```

Instead, the CTA reference time should be used.

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## History

**#1 - 01/09/2018 04:37 PM - Knödlseder Jürgen**

*- Status changed from New to Pull request*

*- % Done changed from 0 to 100*


The GTI time reference is now set to the CTA time reference in GCTAEventList, GCTAEventCube and GCTACubeExposure.

Furthermore, the CTA time reference has been introduced as a constant in ctools, accessible via ctools::time_reference in C++ and ctools.time_reference under Python. The ctools::time_reference() method has been removed, the time reference is no longer a property of a ctool.

The time reference is now used in obsutils to set an observation with the CTA time reference. The above code gives now:

```
>>> print(obs.gti())
=== GGti ===
 Number of intervals .......: 1
 Ontime ....................: 1800 sec
 Elapsed time ..............: 1800 sec
 MJD range .................: 51544.5 - 51544.5208333333 s (TT)
 UTC range .................: 2000-01-01T11:58:56 - 2000-01-01T12:28:56 s (TT)
 Reference MJD .............: 51544.5
```

**#2 - 01/09/2018 05:38 PM - Knödlseder Jürgen**

*- Status changed from Pull request to Closed*

Merged into devel.