

GammaLib - Bug #1312

GCTAPointing::skydir sometimes gives wrong results

08/06/2014 09:52 AM - Lu Chia-Chun

Status:	Rejected	Start date:	08/06/2014
Priority:	High	Due date:	
Assigned To:	Knödseder Jürgen	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
<p>We should get $329.717 = \text{pos_sky.ra_deg}()$ by the following code, but gammalib gives $(329.717-360.0) = -30.283 = \text{pos_sky.ra_deg}()$</p> <p>I made a quick fix by adding the following lines in GCTAPointing::skydir(), but I am not sure whether this fixes all cases.</p> <pre>if (sky.ra_deg() < 0){ sky.radec_deg(360. + sky.ra_deg(), sky.dec_deg()); }</pre> <p>=====</p> <pre>from gammalib import * from ctools import * dir = GSkyDir() dir.radec_deg(329.717, -30.226) pnt = GCTAPointing(); pnt.dir(dir) pos_inst = GCTAInstDir(); pos_inst.detx(0) pos_inst.dety(0) pos_sky = pnt.skydir(pos_inst);</pre>			

History

#1 - 08/06/2014 01:53 PM - Knödseder Jürgen

Why do you think this is a bug?

#2 - 09/10/2014 02:57 PM - Knödseder Jürgen

Coming back to this, is there any reason why RA should always be in the interval $[0, 360]$ deg? So far there is no code in GammaLib that guarantees this, and I'm not sure that this is a good idea. There are for example FITS images with negative RA values. This is fully acceptable.

#3 - 09/10/2014 03:16 PM - Lu Chia-Chun

I thought it was a bug because I have never seen people using negative ra values, or ra values outside $[0,360]$! Since you think it's not a bug, we can close this issue.

I have problems with this issue when I use gammalib in hap to do coordinate transformation. I can get around this problem by checking the returned ra and add 360 when it's negative.

Since people usually expect $ra = [0,360]$, we probably should point out in the document that this is not guaranteed.

#4 - 09/10/2014 03:33 PM - Knödseder Jürgen

- Status changed from In Progress to Rejected

- % Done changed from 20 to 100

Thanks, I prefer that way.

An example: take a Galactic plane map in a FITS file centred on the Galactic centre (0 in middle). The RA axis values become necessarily negative when you move to the left.