

# QGIS Application - Bug report #12450

## Raster Calculator giving bogus values

2015-03-25 01:48 PM - George Rodrigues da Cunha Silva

<b>Status:</b> Closed	
<b>Priority:</b> Severe/Regression	
<b>Assignee:</b>	
<b>Category:</b> Raster Calculator	
<b>Affected QGIS version:</b> 2.8.1	<b>Regression?:</b> No
<b>Operating System:</b>	<b>Easy fix?:</b> No
<b>Pull Request or Patch supplied:</b>	<b>Resolution:</b>
<b>Crashes QGIS or corrupts data:</b>	<b>Copied to github as #:</b> 20615

### Description

Issue:  
I'm trying to do some simple math on QGIS Raster Calculator. In the attachment there's the original data, and the result of the calculation.

This occurs on Raster Calculator, using it manually and using QgsRasterCalculator, with this code:

```
def calculate_radiance(self, rasterLayer, output, param_a=0.03705882, param_b=3.2):  
  
    rasterEntry = QgsRasterCalculatorEntry()  
    rasterEntry.ref = "ent@1"  
    rasterEntry.raster = rasterLayer  
    rasterEntry.bandNumber = 1  
  
    formula = "(ent@1 * {0}) + {1}".format(param_a, param_b)  
  
    rasterCalculator = QgsRasterCalculator(formula,  
                                           output,  
                                           "GTiff",  
                                           rasterLayer.extent(),  
                                           rasterLayer.width(),  
                                           rasterLayer.height(),  
                                           [rasterEntry, ])  
  
    result = rasterCalculator.processCalculation()  
    if result == 0:  
        return output  
  
    return None
```

The calculation is simple (pseudosyntax - I'm using the mouse to assemble the calculation):

```
(raster * 0.03705882) + 3.2
```

I'm getting NODATA raster.

I've tried simple calculations, like

```
raster + 1
```

And there are still problems.

Information:

Versions affected: 2.6, 2.8.1 (tested only on those)

OS: Linux Mint Cinnamon and Ubuntu Studio.

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## Associated revisions

### Revision 559d7bb9 - 2015-06-10 01:45 PM - Nyal Dawson

[rastercalc] Rework raster calculator to use QGIS raster classes

...rather than reading input layers directly through GDAL.

Benefits include more robust handling of nodata/data type conversions, less code duplication, also being able to take advantage of features in QGIS raster code like handling gain/offset in rasters. (fix #12450)

Also, add a choice of output projection to the raster calculator.

Previously the output CRS would be taken from the first raster, with no guarantees that the output extent matched the output CRS. This resulted in empty/misplaced rasters. (fix #3649)

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## History

### #1 - 2015-03-25 02:06 PM - Giovanni Manghi

- Status changed from Open to Feedback

Olá George,

I'm also on Mint 14.04, qgis 2.8.1 and master. I just tested your data and it seems that on master the problem is already fixed... please give it a try and report back. Obrigado.

### #2 - 2015-03-25 02:17 PM - Giovanni Manghi

Giovanni Manghi wrote:

*Olá George,*

*I'm also on Mint 14.04, qgis 2.8.1 and master. I just tested your data and it seems that on master the problem is already fixed... please give it a try and report back. Obrigado.*

I spoke too soon... on Windows I get different results with the very same inputs and expressions, but still not sure are the right results...

### #3 - 2015-03-25 02:49 PM - Giovanni Manghi

it seems that under Linux there is a rounding issue: any factor is rounded to integer, so the result of the

$(\text{raster} * 0.03705882) + 3.2$

formula is always 3 -> (raster \* 0) + 3

**#4 - 2015-03-25 02:58 PM - George Rodrigues da Cunha Silva**

- File *myradiance.tif* added
- File *myradiance.tif.aux.xml* added
- File *radiance\_0.03705882\_3.2\_.tif.aux.xml* added
- File *radiance\_0.03705882\_3.2\_.tif* added

Thank you. I'm not insane.

That can surely be it, because, someone else, on list, Nicolas, tried, but he does not get the rounding issues, but weird double precision results.

If you try the minimum for the raster, you'll see that the math is completely off, something like:

$$149 * 0.03705822 + 3.2 = 8,72167478$$

Even though Nicolas values are not rounded off, they are way off!

**#5 - 2015-03-27 06:03 AM - Giovanni Manghi**

- Priority changed from *High* to *Severe/Regression*

I'll tag this as blocker as one way or another we have to figure something about this issue before the next release.

**#6 - 2015-05-10 01:03 AM - Giovanni Manghi**

- Target version changed from *Version 2.8* to *Version 2.8.2*

**#7 - 2015-05-10 01:27 AM - Giovanni Manghi**

- Status changed from *Feedback* to *Open*

**#8 - 2015-05-14 03:02 AM - Giovanni Manghi**

- Target version changed from *Version 2.8.2* to *Version 2.10*

**#9 - 2015-06-10 04:46 AM - Nyal Dawson**

- Status changed from *Open* to *Closed*

Fixed in changeset commit:"559d7bb943f02660694b37a701d8483106011df1".

**Files**

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data.zip	27 KB	2015-03-25	George Rodrigues da Cunha Silva
radiance_0.03705882_3.2_.tif	99 KB	2015-03-25	George Rodrigues da Cunha Silva
radiance_0.03705882_3.2_.tif.aux.xml	2.59 KB	2015-03-25	George Rodrigues da Cunha Silva
myradiance.tif	99 KB	2015-03-25	George Rodrigues da Cunha Silva
myradiance.tif.aux.xml	2.5 KB	2015-03-25	George Rodrigues da Cunha Silva