

# Gnuastro 0.10 released

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Dear all,

I am pleased to announce the 10th release of GNU Astronomy Utilities (Gnuastro 0.10).

Gnuastro is an official GNU package of various command-line programs and library functions for the manipulation and analysis of (astronomical) data. All the programs share the same basic command-line user interface (modeled on GNU Coreutils). For the full list of Gnuastro's library, programs, and a comprehensive general tutorial (recommended place to start using Gnuastro), please see the links below respectively:

[https://www.gnu.org/s/gnuastro/manual/html\\_node/Gnuastro-library.html](https://www.gnu.org/s/gnuastro/manual/html_node/Gnuastro-library.html)

[https://www.gnu.org/s/gnuastro/manual/html\\_node/Gnuastro-programs-list.html](https://www.gnu.org/s/gnuastro/manual/html_node/Gnuastro-programs-list.html)

[https://www.gnu.org/s/gnuastro/manual/html\\_node/General-program-usage-tutorial.html](https://www.gnu.org/s/gnuastro/manual/html_node/General-program-usage-tutorial.html)

Many new features have been added, and many bugs have been fixed in this release. For the full list, please see [1] below (part of the NEWS file within the tarball). Some of the highlights are: 1) You can now do column arithmetic (on FITS and plain text tables) directly within the Table program, it also has some operators unique to table columns for example conversion of pixel to world coordinate system (WCS) coordinates and vice-versa. 2) Crop can now be used to pull out sections of 3D data cubes also. 3) You can let CosmicCalculator find the red-shift by identifying an emission line's wavelength or name, and its observed wavelength.

Here is the compressed source and the GPG detached signature for this release. To uncompress Lzip tarballs, see [2]. To check the validity of the tarballs using the GPG detached signature see [3]:

```
https://ftp.gnu.org/gnu/gnuastro/gnuastro-0.10.tar.gz      (5.2MB)
https://ftp.gnu.org/gnu/gnuastro/gnuastro-0.10.tar.gz.sig (833B)
https://ftp.gnu.org/gnu/gnuastro/gnuastro-0.10.tar.lz      (3.4MB)
https://ftp.gnu.org/gnu/gnuastro/gnuastro-0.10.tar.lz.sig (833B)
```

Here are the MD5 and SHA1 checksums (other ways to check if the tarball you download is what we distributed):

```
886c7badcd5b94d28bb616013b303bfb  gnuastro-0.10.tar.gz
48d1081543ba19b5d1b59e6d29b3b349  gnuastro-0.10.tar.lz
fce509583955f4bf15a764f30c7720de9df01a83  gnuastro-0.10.tar.gz
23c7f8d570e7b2851302500b5227026cb0d76340  gnuastro-0.10.tar.lz
```

For this release, I am very grateful to Alexey Dokuchaev, Joseph Putko and Raul Infante-Sainz for direct contributions to Gnuastro's source. Hamed Altafi, Roberto Baena Gallé, Zahra Bagheri, Leindert Boogaard, Bruno Haible, Raul Infante-Sainz, Lee Kelvin, Elham Saremi, Zahra Sharbaf, David Valls-Gabaud and Michael Wilkinson (in alphabetical order) also provided very good suggestions and bug reports, I am very grateful to them.

If any of Gnuastro's programs or libraries are useful in your work, please cite `_and_` acknowledge them. For citation and acknowledgment guidelines, run the relevant programs with a `--cite` option (it can be different for different programs). Citations `_and_` acknowledgments are vital for the continued work on Gnuastro, so please don't forget to support us by doing so.

This tarball was bootstrapped (created) with the tools below. Note that you don't need these to build Gnuastro from the tarball, these are the tools that were used to make the tarball itself. They are only mentioned here to be able to reproduce/recreate this tarball later.

```
Texinfo 6.6
Autoconf 2.69
Automake 1.16.1
Help2man 1.47.10
ImageMagick 7.0.8-58
Gnulib v0.1-2794-gc8e2eee54
Autoconf archives v2019.01.06-55-gc5711b3
```

The dependencies to build Gnuastro from this tarball are described here:

```
https://www.gnu.org/s/gnuastro/manual/html_node/Dependencies.html
```

Best wishes,  
Mohammad

[3]

[GNU Sci/Tech](#)

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**Source URL:** <http://www.tuxmachines.org/node/126575>

#### Links:

[1] <http://www.tuxmachines.org/taxonomy/term/144>

[2] <http://www.tuxmachines.org/taxonomy/term/75>

[3] <https://lists.gnu.org/archive/html/info-gnuastro/2019-08/msg00000.html>