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Installation of GDL

The software package GNU Data Language (GDL) can be downloaded at the project's homepage ([link](#)), then follow the instructions for Win / Mac / Linux to install. In common Linux distributions (Ubuntu, Debian, ...) one can use the package management, too:

```
sudo apt-get install gnudatalanguage
```

For the use in the Laboratory Courses the IDL Astro Library is also required. It can be downloaded at:

<http://idlastro.gsfc.nasa.gov/homepage.html>

Unpack the archive (*astron*) and change the following lines of the file *readfits.pro* in the directory *pro*:

```
Line:          ndata = product(dims,/integer)
replace by:    ndata = dims[0]
```

Additionally create a file *fitsconvert.pro* with the following content:

```
function fitsconvert,image
if n_elements(image) eq 0 then begin
    print,'Usage: converted_image=fitsconvert,original_image'
    return,0
endif
erg=(long(image)+65536) mod 65536
return,erg
end
```

The directory *astron* and the file *fitsconvert.pro* can now be moved to an arbitrary place. To use the AstroLib, create an additional start-up script that exports the paths of the libraries. This script can e.g. be saved as hidden file in the home directory (e.g. *\$HOME/.gdl_startup*). If the directory *astron* and the file *fitsconvert.pro* are placed in */home/praktikum/opt/gdl-astrolib*, the start-up script would look like:

```
!PATH=!PATH + ':/usr/share/doc/gnudatalanguage/examples/pro'
!PATH=!PATH + ':/usr/bin/'
!PATH=!PATH + ':/home/praktikum/opt/gdl-astrolib/astron/pro'
!PATH=!PATH + ':/home/praktikum/opt/gdl-astrolib'
loadct,0, ncolor=255;
!P.BACKGROUND=255;
!P.COLOR=0;
!X.STYLE=1;
!Y.STYLE=1;
!Z.STYLE=1
print,'';
```

```
print, '*****';  
print, '** Personal settings are loaded and active **';  
print, '*****';  
print, '';
```

The first two lines contain links to the programs that were installed as example gdl programs and the executable gdl file. The third/fourth line contain the path of the *astron* directory (the *.pro* files) and the file *fitsconvert.pro* (adjust paths as needed).

If the start-up script is in the directory */home/praktikum*, prepare it for the usage in the Bash-Shell (in *\$HOME/.bashrc*) by adding the following line to the *.bashrc* script:

```
export GDL_STARTUP=/home/praktikum/.gdl_startup
```

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