Installing MESA – a Quick Guide

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20 November 2016

This is a small guide on how to install MESA[1] on your Linux/Mac laptop. If you do not want a local installation, please have a look at the other guide on how to use MESA on the ast-machines.

1 Laptop

Follow the guides from (remember to install and activate MESA SDK *before* MESA):

- `http://mesa.sourceforge.net/prereqs.html` , and

- `http://www.astro.wisc.edu/~townsend/static.php?ref=mesasdk` .

If you do not want to permanently switch on the MESA SDK (because it messes with your compilers and libraries), you can write a small bash-function instead of adding the lines directly to your ~/.bashrc. Add the following to ~/.bashrc (modify to match your path, if you installed the code or SDK in a different location):

```
# MESA -- setup session
initmesa () {
    export MESASDK_ROOT=${HOME}/software/mesasdk
    source $MESASDK_ROOT/bin/mesasdk_init.sh

    export OMP_NUM_THREADS=2
    export MESA_DIR=${HOME}/software/mesa
}
```

In your terminal, you can just type (after you have sourced the file)

```
initmesa
```

whenever you want to run MESA and everything should be set up correctly.

Note that for Mac OS, the location of the MESA SDK is hardwired (I think?) and the following should be substituted in the code above:

```
    export MESASDK_ROOT=Applications/mesasdk
```

Furthermore, I believe that Mac OS reads ~/.bash_profile by default and not ~/.bashrc.

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[1](Modules for Experiments in Stellar Astrophysics, see `http://mesa.sourceforge.net/`

2 Tutorial

As a first exercise, we will follow the first steps of the online tutorial[2].

Start by changing to your home directory and create a folder to work in:

```
cd ~; mkdir stars; cd stars
```

Then copy the MESA working directory:

```
cp -r ~/software/mesa/star/work tutorial; cd tutorial
./mk
```

Now you can follow the rest of the guide to learn how to run the code and modify the input file.

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[2]http://mesa.sourceforge.net/starting.html