Installing C17.02 to be used with PyCross

Before we begin, it must be known that on my system I have c13 running and this method allowed me to have c13 and c17 installed in different folders and called by different commands:

- Command cloudy: calls the c13 version.
- Command cloudy17: calls the c17 version.

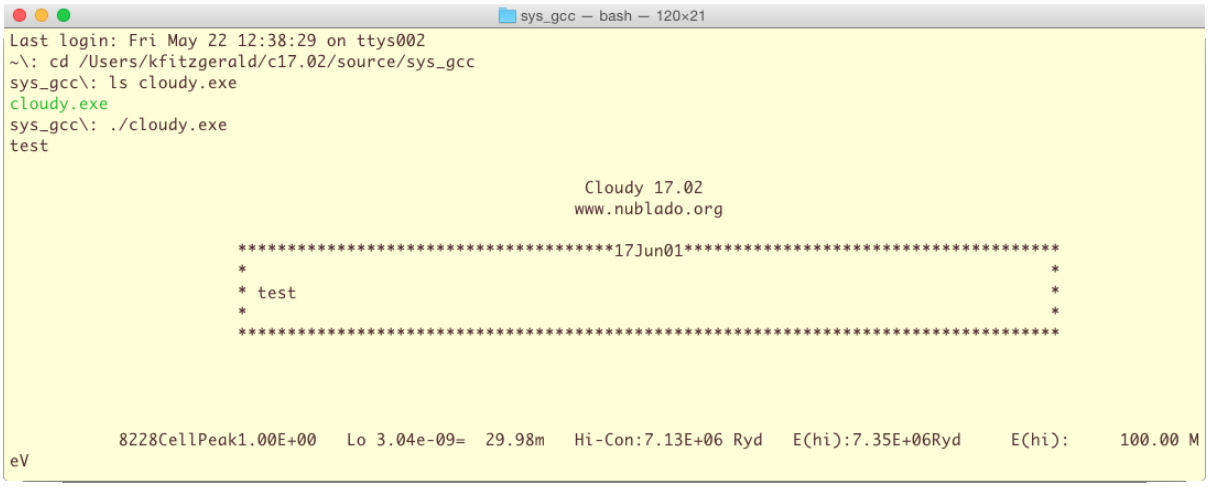
If this is a new install and you don't have any previous version of Cloudy installed then refer to:

https://www.youtube.com/watch?v=emg4LoynLRE&list=PLza8S46F-17XZCtzm1rVZNGsII6O_3wXN

To start:

1. Open terminal
2. Download c17.02 via the following command
   curl -O https://data.nublado.org/cloudy_releases/c17/c17.02.tar.gz
3. This will download to your home directory, double click on it to create a new folder of the same name i.e. c17.02
4. Using terminal navigate to the source folder then sys_gcc (this is the compiler I use – check your system)
   i.e. user_dir/c17.02/source/sys_gcc/
5. In the terminal type make
6. This will compile and set up Cloudy 17.02
7. Test that you have cloudy.exe in this folder
8. Now test that c17 is working by typing:
   - ./cloudy.exe → then hit enter
   - test → then hit enter
   - hit enter again.
9. This will run a cloudy simulation to test that everything is working, refer to the screenshots on the following page
10. Make a note of the path to cloudy as this will be used in PyCross; reset the path

/Users/kfitzgerald/c17.02/source/sys_gcc/cloudy.exe



```
sys_gcc — bash — 120×21
                Label         line    computed     asserted Rel Err Set err  type
 ChkMonitor     HYDR             1    -3.0514 =    -3.0520  -0.001   0.050
 ChkMonitor     HELI             2    -1.0723 =    -1.0760  -0.008   0.050
 ChkMonitor     CARB             2    -2.3630 =    -2.3590   0.009   0.050
 ChkMonitor     CARB             3    -0.5899 =    -0.5860   0.009   0.050
 ChkMonitor     CARB             4    -0.3630 =    -0.3610   0.005   0.050
 ChkMonitor     CARB             5    -0.5163 =    -0.5140   0.005   0.050
 ChkMonitor     OXYG             3    -0.8646 =    -0.8650  -0.001   0.050
 ChkMonitor -   OXYG             4    -0.1580 =    -0.1480   0.023   0.050
 ChkMonitor     OXYG             5    -0.8009 =    -0.7980   0.007   0.050
 ChkMonitor     CA B      4861.33A     1.1058 =     1.1080   0.002   0.050   intr
 ChkMonitor     O  3      5006.84A     3.1989 =     3.2070   0.003   0.050   intr
 ChkMonitor     htot             0   -15.0154 =   -15.0190  -0.008   0.050

 Cloudy compiled on May 22 2020 in OS Apple MacOS using the clang++ 610 compiler. Mode I32LP64, denormalized float: T do
uble: T.

 Cloudy ends: 2 zones, 1 iteration. (single thread) ExecTime(s) 8.68
 [Stop in cdMain at ../maincl.cpp:496, Cloudy exited OK]
sys_gcc\:
sys_gcc\:
```

Setting up a system path: The next part is not needed if you are using PyCross, it just sets up a shortcut so that c17 can be called from any folder. On my system I have c13 also installed. I will keep this installation and run c17 alongside it.

1. If you have not already done so create a folder called .my_bin → **mkdir .mybin**
2. Create a new file using touch → **touch cloudy17**
3. Open it in a text editor (I use sublime)
4. Add the path from above with the following additional text

   /Users/kfitzgerald/c17.02/source/sys_gcc/cloudy.exe -p $1
5. Save and close the text editor
6. Change the permissions by typing in the editor

   chmod +x cloudy17

```
.my_bin\: touch cloudy17
.my_bin\: ls
cloudy  cloudy17
.my_bin\: sub cloudy17
.my_bin\: chmod +x cloudy17
.my_bin\: ls
cloudy  cloudy17
.my_bin\:
```

Generate a Cloudy simulation:

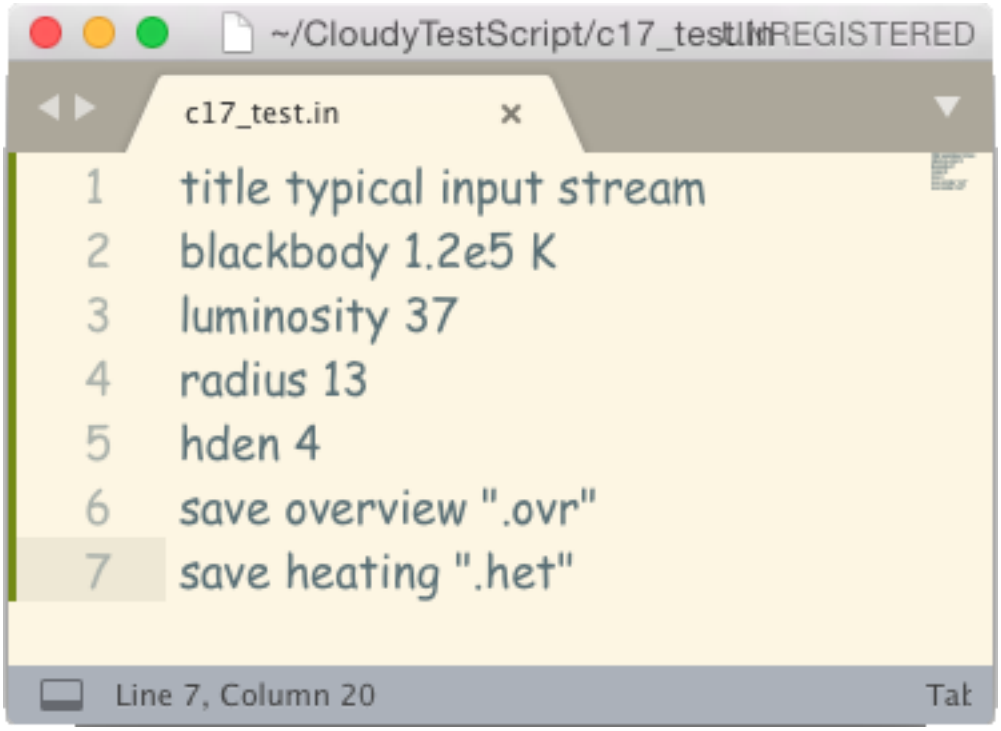
1. In your home directory create a folder called CloudyTestScript:

   mkdir CloudyTestScript

2. Inside this directory create a new file called c17_test.in

   touch c17_test.in

3. Fill the file with the following text then same the file and return to the terminal



4. Ensure that you are in the CloudyTestScript directory then type **cloudy17 _test**
   - There is no need to type the .in extension.
5. This will generate the following files in this folder.