see ~/research/c07_02_00/source/ hirogridSAM.cpp
and Makefile

===================
to install place in directory, edit path.c in source and then make (g++) in source
finally set in bashrc:
export CLOUDY_DATA_PATH="/path/to/cloudy/data/"
to add stellar continua
add cloudy.exe's directory to your path

============================

Below is what a typical CLOUDY calculation looks like in my table
files. The only things that change from run to run are temperature,
hden, F(nu), z, and metalicity. Actually, for temperature above 10^5K,
I also turn off grains by eliminating the "grains" and "no grain
molecules" commands.

Let me know if you have any other questions.

hiro

****
********06Feb09*************************************

*
*
                * print every 1   *
                * hden -2.500   *
                * constant temperature, t=2.750   *
                * table power law, spectral index -1.8   *
                * F(nu)=-20.051 *
                * fireball z=3.000   *
                * metals -4.000 log   *
                * element helium abundance -1.103   *
                * element lithium off   *
                * element beryllium off   *
                * element boron off   *
                * element scandium off   *
                * element vanadium off   *
                * atom H2   *
                *grains *
                * >>>> mie_read_opc reading file -- graphite_ism_10.opc
 <<<< *
                * >>>> mie_read_opc reading file -- silicate_ism_10.opc
 <<<< *
                * no grain molecules   *
                * cosmic rays background   *
                * failures 10   *
                * set drmin 11.0   *
                * age 10000000000 years   *
                * iterate to convergence   *
                * stop temperature 10 linear   *

```
                  * stop thickness 10 parsec linear                                    *

*
*

************************************************************************************


> Hey Hiro,
> Thanks for sending this. Just a few of questions:
> -Why no Haardt Madau spectrum? Did you use ionizing flux from Nick's
> code instead (F(nu))? -Why the age parameter? Does it change your
> answers or just tell you when things go wrong?
```

H&M spectrum is there. It's specified by the slope of the power law
(table power law line) and the normalization (F(nu) line). The
normalization is given by equation (34) in hart.ps or, equivalently, H&M
1996. It's just a strict function of the redshift.

The age parameter just tells me when things go horribly wrong, ie, the
timescales of the model is of the order of the age of the universe.

You can in fact use ionizing flux from Nick's code, but that will just
add another dimension to the already 4D table. Good luck calculating
that one :)
> -Why the stop temperature criterion for a constant temperature model?

The default lower temperature stop criterion in CLOUDY is 10^3 K. If
you were to calculate a constant temperature model at 100K, the model
will immediately stop due to the temperature criterion. So, we have to
lower the temperature stop threshold to 10K to not have the model stop
prematurely.