

## Reading (and printing) assignments in preparation for group activity.

### DUE Monday 1-26,

#### Print copies of

- Grevesse&Sauval, Space Sci. Rev. 85 (1998) 161 (see website)
- Lodders, Ap. J. 591 (2003) 1220
- Grevesse et al. Astrophys. Space Sci 328 (2010) 179
- Serenelli et al. Ap. J. 743 (2011) 24

and bring them to class

#### Read

- Grevesse&Sauval 1998 all
- Grevesse et al. 2010 all
- Lodders 2003 section 2
- Serenelli et al. 2012 introduction.

You don't have to understand everything. Try to extract the important information and focus on the elements assigned to you.

All should think about the recent changes in the metallicity of the sun from Grevesse et al. 1998 to Grevesse et al. 2010. Extract the arguments that are made in favour or against the change.

**Specific instructions depending on your assigned elements.** You should understand the main points, including the main sources of information for the abundance of a given isotope:

#### He:

- Read Lodders 2003 2.3.1.1. very thoroughly and understand the main points of how the He abundance is determined in the end. Look at He, but also at X,Y,Z (this is closely related) and know the difference between X,Y,Z and  $X_0, Y_0, Z_0$  and what the main reason for the difference is.
- Read Grevesse & Sauval 1998, section 4.1 very carefully

#### C,O:

- Read Lodders 2003 2.3.1 introduction carefully. Especially familiarize yourself with Table 5.
- Compare the abundances of C,N,O in Lodders 2003 Table 1 and Grevesse and Sauval 1998. Make a table of the data and the difference and print it out. The explanation for the difference is in Grevesse et al. 2010 (new, lower photospheric abundances), who update the results from Asplund and co-workers that went into the Lodders compilation. Understand what is going on and where the differences come from.

#### heavy noble gases Ne,Ar,Kr,Xe

- Read Lodders 2003 2.3.1.2., 2.3.1.3., 2.3.1.4. very carefully