

Suggested reading for Week 1

1. The Origin of the elements: a general survey

Podolansky, J. & Ter Haar, D.

Les Processus Nucleaires dans Les Astres, Colloq. Int. Astr. Liege 1954

(see ADS)

2. Burbidge E.M., Burbidge G., Fowler, W.A. & Hoyle, F.

Rev. Mod. Phys. 29, 457, 1957

3. Cameron, A.G.W., PASP, 69, 201, 1957

(Cameron, A.G. W. Stellar evolution, nuclear astrophysics and nucleogenesis
Chalk River Report 41, 1957)

4. Cameron, A.G.W., Models d'Etoiles et Evolution Stellaire, Colloq. Int.

Astr. Liege. 1959 (see ADS)

In reading this quartet of papers, I offer the following points to ponder:

a) The Liege colloquia in the 1950s were one of very FEW regularly held international conferences. Topics generally reflected a principal research interest of the Liege Institut d'Astrophysique and its two professors - Pol Swings and Paul Ledoux. (Pol Swings was a regular observer at McDonald, especially during World War II, and a close collaborator with Otto Struve.)

Contrast the ill-formed (?) ideas reviewed by Podolansky and Ter Haar with the much more concrete ideas about stellar nucleosynthesis by Cameron at Liege just five years later.

Such a contrast reflects the revolution in our thinking brought about by B2FH and Cameron.

b) Apart from the 'cosmic' abundance table based on meteorites, what determinations of compositions of astronomical objects were considered by B2FH and Cameron as they assembled their ideas on nucleosynthesis and the origins of the chemical elements. Were such determinations critical to or of marginal relevance to establishing the correctness of their proposals?

c) Are there crucial differences between the nuclear processes and nucleosynthetic sites advocated by B2FH and by Cameron?

d) Comment on how closely B2FH and Cameron got to getting the

`right' answers where right = contemporary. (This can not be completed until the end of the semester!)

I have a copy of CRL-41 and can make it available for a short term loan.

I will put on the class website the Table of Contents for the 1953 and 1959 Liege Colloquia. All (I think) of these papers have just been made available on ADS.
