

DISCUSSION AFTER PAPER BY NADYOZHIN

Arnett to Nadyozhin: If I correctly understood what was said, Craig Wheeler and I have independently obtained similar results to those for carbon ignition obtained by Nadyozhin. We concluded that these results were produced by inadequate mass zoning. Although it seems clear that the detonation wave will propagate, it is difficult properly to treat the *formation* of the detonation wave under these conditions.

Fowler: As a result of these talks, I am completely bewildered and confused about the scenario for a supernova explosion. Ostriker said that he used a nuclear δ function as the source of the explosion, whereas Arnett said that few nuclear reactions occurred. Arnett said that there was some contribution due to diluted neutrino flux, while Wilson said that there was not. Can these different comments possibly be reconciled?

Ostriker: A time scale of less than 10^3 s is effectively a δ -function. (reply to Bisnovatyi-Kogan). It does not really matter whether the pulsar energy is carried by a low frequency wave or by an Alfvén wave or some other mechanism provided that it is propagated outwards.

Fowler: I find the pulsar luminosity one an attractive one but if this is applicable does any nucleosynthesis occur in the event?

Arnett: The low Z elements are at very low densities and they will not be processed very much. I am uncertain of the effect on elements between silicon and the iron peak.

Fowler: You have been an ardent supporter of explosive nucleosynthesis. Does any nucleosynthesis occur during a supernova explosion? If not, where does explosive nucleosynthesis occur?

Arnett: I cannot be certain; we are learning that our simple-minded models are not realistic.

Bisnovatyi-Kogan: In the model which I described, energy generation occurred in a very short time ~ 7 – 10 s unlike the very much longer timescale associated with the magnetic explosion.

Nadyozhin: I want to reply to Arnett's remark. The detonation was thoroughly treated in the calculations performed by Ivanova *et al.* (1973). Both the equations of hydrodynamics and of nuclear kinetics were used in contrast with previous works.