

MEMO FROM  
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STANFORD UNIVERSITY  
STANFORD, CALIFORNIA

TO:

Jastrow  
NASA

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RC  
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Dear Bob:

Enclosed a fresh copy of this fantasy about a 'crystalline plasma'. Don't let this name mislead you-- I have in mind simply sheets of ions of opposite charge but equal mass so they can be accelerated by a full-wave linear accelerator.

The big problem is, of course, generating the ions, especially the negatively charged ones. However, these are recorded in mass spectrography though they are much less studied than the cations. One thought I had was to mix a vapor like  $\text{NH}_4\text{F}$  with another much heavier vapor under pressure to act as a polarizing dielectric -- a molecular sieve could then let out such  $\text{NH}_4^+$  and  $\text{F}^-$  as are formed. Alternatively, even  $\text{NH}_3$  itself might do this, but I don't see a way to retain the  $\text{NH}_3$  as a 'solvent' gas, above its critical temperature, while harvesting the ions. Some elaborate scheme might be devised of condensing out the  $\text{NH}_3$  from a solution of  $\text{NH}_4\text{F}$  in which the ions have been boiled out. My main thought was that if there were any intrinsic merit in structuring the plasma it might motivate some additional work needed to find ways to generate these particular ions.

Yours,