

December 18, 1959

Dr. Edward Ginzton  
Hansen Laboratories  
Stanford University

Dear Ed:

I really enjoyed our conversation today.

As to your advice on somehow 'registering' my suggestion of exploring the use of ion pairs, may I take advantage of your offer to look at the enclosed statement of it, and return one copy with a notation that you had seen it on the indicated date? I am enclosing a second copy which you may keep in your files if you wish.

I had also sent this to Dr. Robert Jastrow, with whom I have had a number of other dealings, in NASA -- but propulsion is not one of his special interests and I can account for the lack of any reaction from him by many other distractions. But he should have had this in his files as of March and July 1959. I have not discussed it elsewhere, that is outside Stanford.

In view of <sup>Hansen Labs' and</sup> Varian's experience with ion acceleration, I should think there would be some merit in your at least taking a general look at the problem of ionic propulsion, whether or not the suggestion of using both positive and negative ions of equal  $e/m$  ratio has any merit. The subject has been reviewed by George Sutherland (Boeing Co.) in the ARS journal for October 1959, and Stuhlinger also has reviews in press and in print in *Vistas in Astronautics*, Vol. 1 (Pergamon Press) and *Advances in Space Science*, Vol II. (Academic Press).

Yours sincerely,

  
Joshua Lederberg