

TO Mike Minovich FROM Joe Gutting DATE 1/21/64
EXT. 4988

SUBJECT Proposed AIAA Paper
CC: V. C. Clarke, Jr.

I have read your report, TR 32-464, and your proposed paper for the AIAA Journal, "The Determination and Potentialities of Advanced Free-Fall Interplanetary Trajectories". I believe your results, particularly the tables, are of considerable interest. You should put the finishing touches on the paper and submit it as soon as possible.

The main criticism I have about your paper is that it is too long. The maximum length for the AIAA Journal is 22 pages of text and you have about 30 pages. I believe the paper can be shortened in two places. First some of the equations and analysis can be eliminated in Part II. It is not necessary to derive all of your equations; just show the final equation. Most people are satisfied so long as the equation looks reasonable and there is enough information for them to derive it. Also, it is not necessary to derive well known conic relationships such as Eqs. 4, 7 and 18 or equations which are not used in obtaining your results in the tables.

Another place where the paper can be shortened is in the discussion of possible missions in Part IV. I believe that there should be some discussion of these novel missions, but that you should not go into such detail as computing payloads or too much discussion of specific launch vehicles. That type of mission analysis is more typical of Astronautics than of the AIAA Journal. If you were to shorten the paper in these two areas, it seems to me that it would emphasize the tables of "advanced" trajectories and your method of computing them. In my opinion, they are the main significance of the paper.

I have several specific comments as follows: I do not think the title is descriptive enough. Somebody has suggested "Free-Fall Trajectories with Multiple Planetary Encounters" or something similar. The Figures and Tables should have titles. You need to write an abstract. I think Figs. 7 and 8 can be eliminated. I think there should be a summary or conclusion part at the end.

I hope my comments do not discourage you because, on the whole, I think the paper is very good and contains significant results of general interest. I hope you will be able to devote enough time to finish it up, so it can be submitted soon before anybody else comes up with something similar. Let me know if you need any secretarial or art work. I have made a photocopy of the paper and am returning the original to you. Please call me if you wish to discuss this.

EC/irg