

July 2, 1963

Dr. Harry O. Ruppe  
Future Projects Office  
Marshall Space Flight Center  
Huntsville, Alabama

Dear Dr. Ruppe:

During the Mars Symposium held in Denver Colorado three weeks ago, we met and talked a few minutes regarding manned trips to Mars. Although our meeting was brief, you expressed some interest in a paper I wrote regarding unconventional free-fall trajectory profiles. When I came back to JPL I made some rough calculations based upon some vehicle design parameters for small Mars excursion modules and larger mission modules and came up with some very interesting results. The calculations show that it may be possible to carry out an actual manned Mars landing mission with launch vehicles no larger than Saturn 5. This possibility exists during 1970 and 1972 but will not recur before 1977.

Since JPL is not working on manned Mars missions I feel that these results may be of interest to you and your colleagues at MSFC. Due to the unconventional nature of the trajectory profiles which may be utilized by the Saturn 5, ~~time~~ is a critical factor. Thus, instead of waiting until the paper is published as a formal JPL Technical Report (number 32-464), I am, along with this letter, sending you a copy of the original manuscript. I shall however send you a copy of the formal JPL report as soon as it becomes available. The relevant part of the paper is contained in pages 91 through 118.

Since ~~conventional~~ manned Mars missions could not be carried out without Nova Class launch vehicles, the possibility of using the Saturn 5 for the mission in 1972 would probably save a great deal of time. In view of the significance of these results I shall be ready to assist you in any way I can.

Sincerely yours,

JET PROPULSION LABORATORY

Michael A. Minovich, Jr.

MAMJr/cw