Charles Kohlhase MS 264-441 Jet Propulsion Laboratory Pasadena, CA 91109 September 4, 1996

Dear Charlie:

In a recent conversation with Rex Ridenoure I was informed that JPL might be ready to finally acknowledge my invention of gravity propelled interplanetary space travel (also known as gravity-assist trajectories) by granting me NASA's Exceptional Scientific Achievement Award (or its equivalent). (Something JPL refused to do in 1972 after Dr. C.R. Gates, head of the Systems Division who was familiar with the innovation, approved the award.) In view of the fact that so much time has elapsed since I made the innovation back in 1961, Rex had indicated earlier that there is some confusion as to what my invention really was, what it represented, and what resulted from it.

I have therefore constructed a paper¹ entitled "The Invention of Gravity Propelled Interplanetary Space Travel And What It Represented." It is intended to provide a general overview of what this innovation really was, and what impact it had on the history of space travel. To avoid any unfair accusations of "self-embellishment," I have based the entire paper on the actual historical evidence-the technical literature published at that time. In particular, the paper gives the historical technical background behind the possibility of achieving interplanetary space travel (the propulsion limitations) prior to my invention. Professor Harry Ruppe (Technische Universität Munchen Germany), who was an original member of Von Braun's rocket group that came to America after World War II and is one of the world's leading astrodynamicists, has seen the paper and wants to see it published with multiple authors. He is very knowledgeable in the field of interplanetary trajectories -- the previously believed unchangeable Hohmann minimum energy trajectories that were known prior to my invention -- and the limited possibility for interplanetary space travel with chemical rocket propulsion that resulted from this basic theoretical framework. He is fully aware of the historical novelty of my invention, and how it opened up the entire solar system to exploration with instrumented spacecraft. (You can call him at 49/89/289-16003.) I am enclosing some copies herein. Please give a copy of this paper to anyone at JPL who is still confused. I am also enclosing the supporting references for a more detailed examination just in case there is any lingering disbelief.

Rex also indicated that you are working on an award citation for my invention. I believe that it is standard practice to let the inventor submit the citation write-up for approval. Hence, I am submitting mine herein.² Since the NASA Exceptional Scientific Achievement Award requires two separate citations (a short one and a long one), both are enclosed. You will notice that I explicitly describe what I really invented instead of using the expressions "gravity-assisted trajectories," or "gravity-propelled trajectories." I am assuming the award will be the type originally agreed upon in 1972 (the Exceptional Scientific Achievement Award).

If there is anyone at JPL who is still attempting to withhold the award for the basic invention, or to limit its scope, I am formally requesting this person (or persons) to be identified along with his

or her written explanation as to why the award should not be granted, and all the supporting documentation.

I appreciate the effort that you are making on my behalf.

Sincerely,

Michael Minovitch

MAM/dk

Enclosures (2):

- 1. Minovitch, M. A., "The Invention Of Gravity Propelled Interplanetary Space Travel And What It Represented," (to be published with multiple authors).
- 2. Proposed Citations for Minovitch's Invention of Gravity Propelled Interplanetary Space Travel, (NASA's Exceptional Scientific Achievement Award-1996)