P.O. Box 1208
Spartanburg, S.C.
April 1, 1964

Dear Oscar,

I find the information on the Texas "uplifts" very interesting. It is probably very difficult to put one's finger on the essential facts. In the case of the Solitario, Herrin spent several summers camping out in a rigorous environment to compile the data. I have not read his account but have an idea what is in it from several conversations about it. We can rule the Solitario out because it is definitely made by igneous actions. The energy was undoubtedly deep seated.

The Hico structure and the one in Wilbarger County are both new to me. I can not comment on them. However, uplift does not seem to me to be the essential factor. As I understand the effect of impact there is a compression of the ground followed by a rebound that is unrecoverable because the viscosity of the rock dampens the oscillation. At Winslow, Arizona one can see the outward tilting quite nicely. In the Odessa structure (the only other one I have seen) these same qualities appear to have jammed the central plug. I am much influenced by these cases when I think of the Colorado City feature.

My kodachromes are not as good as I had hoped because we were much higher than I had realized. All they show is a remarkably perfect ring feature isolated on a brownish red plain. Cretaceous outliers are visable in greyish tones inside and outside the ring. The most remarkable feature is the isolation.

When one looks for explanations the lack of brecciation must imply either that it is not of impact origin or that it is a fossil: a once deeply buried root now exposed by erosion of the Cretaceous cover. I have written Herrin all of this but as yet have received no answer.

I am not at all impressed by the relationship of this structure to the underlying Permian evaporites. Salt does not flow as a dipir until it is buried by a significant load of sediment. If the situation were favorable to piercements in West Texas there would be not one isolated in the shallow rim of the eastern edge of the basin but many tens of them, located where the deepest depressions and thickest salts facored the action. We would find them in the central part of the Delaware Basin in western Ward Country for example. I have worked a good deal with the West Texas geology and can not see a parallel to this anywhere in my experience.

The unique quality of a fossil crater, the lack of debris, and of brecciation are against the impact concept. Nevertheless, I do not see a better working hypothesis. Two things could be done. One is to ask the U.S.G.S. to make a check in their Coesite project. The other is to have a graduate student make a very thorough map to see just what is present and how the pieces fit together. I am impressed by the sharply defined rim. There must be a limit to the deformation...otherwise there would be a series of minor questas concentric to this and lying farther out. Solution is most unlikely because it would not be geometrically perfect. Lastly, the saucer shape is unusual for a geomorphic form.

I think you chaps on the ground should look it over more carefully. Herrin is a very successful young genius. He is a true one - no joke on that. With early success has come an aplomb that is a character trait. It may be that he does not have time for these things and is not large enough be be graciously helpful. Jim Brooks at SMU or Dan Ferray at TCU may be of more help. Phil Oetking at EM8 2155 in Dallas has been (is?) employed as a Moon geologist with Tempco. He would have resources.

I have just called Uel Clanto at NAASA in Houston alerting them to the facts. He is also a geologist and a Fort Worth boy who knows who you are. He said they would check it out, but it may take over a month before they get to it. He will contact you. Keep me informed. I am really interested.

Sincerely,

John W. Harrington