"Robustness and Accuracy of the QUEST Algorithm," Yang Cheng and Malcolm D. Shuster, Paper AAS 07-102, it 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 28–February 2, 2007; Proceedings: *Advances in the Astronautical Sciences*, Vol. 122, 2007, pp. 41–61.

This work was written in response to an article in the JAS by Markley and Mortari which showed that for an extreme example, the QUEST algorithm did not perform as well as the algorithms developed by those authors. Our work showed that (1) the example of Markley and Mortari (their scenario 2) was highly unphysical and required a very stupid attitude determination system design. In addition, by a slight rearrangement of terms in the QUEST characteristic polynomial, namely,

$$\lambda^4 - (a + b)\lambda^2 + ab \rightarrow (\lambda^2 - a)(\lambda^2 - b)$$

this poor behavior disappeared entirely. Making the inverse rearrangement of terms in the characteristic polynomial for the Markley and Mortari algorithms caused them to display the identical poor performance for scenario 2.