2000b

"A Most Visionary Paper on the Focal-Plane Representation of Rotations," M. D. Shuster, Paper AAS 00-267, *The Richard H. Battin Astrodynamics Symposium*, College Station, Texas, March 20–21, 2000; Proceedings: *Advances in the Astronautical Sciences*, Vol. 106, 2000, pp. 395–405.

The words "A most visionary paper" were added afterwards. The Battin Symposium included a banquet during which the principal symposium organizer, John L. Junkins, distributed gag awards. Because my paper included the word "focal" he decided to bestow upon me the award for the most visionary paper, which I duly added to the title.

I missed the plane from BWI to Houston, on my way to the Battin Symposium, and had to wait eight hours for the next available flight. I spent the intervening time with an engineering pad and pencil working out the uniform probability distribution functions for the different attitude representations. At the symposium, I continued to work on these in the back row of the symposium room when I could no longer follow the talk. (It happens frequently that I cannot follow a talk outside attitude estimation or attitude kinematics for very long.) By the time I returned to Maryland I had most of the results that would become 2001a, 2001b and 2003i. Despite its benefit in this case, I do not recommend missing a flight as an element in research.

Although I had sent the result for the quaternion pdf to Markley in 1993 following a telephone conversation, the real impetus for this work came from a paper by Mortari, Junkins and Markley on the OLAE algorithm presented at the Space Flight Mechanics Meeting in Clearwater Florida in January 2000. I was certain that the modeling for the uniform distribution of attitude used in simulation studies for that paper was not correct, and thought that it would be a good idea to investigate the problem more thoroughly. The opportunity came after missing my plane.

Superseded by 2000c. See the comment to 2000c for a description of this work.