

2000 Brouwer Award Winner - E. Myles Standish

Celestial mechanics was the first quantitative physical science and remains one of the most successful and accurate. E. Myles Standish has led the development of the JPL planetary ephemerides, requiring in-depth knowledge of reference frames, astrometry, celestial mechanics, numerical integration techniques, estimation theory, error analysis, and data reduction. He has pioneered the use of unique data sets to improve the accuracy of the ephemerides. The JPL ephemerides provide international standards for spacecraft navigation, almanacs, historical astronomy, solar system tests of gravity theories, pulsar timing, and quantitative studies of long-term solar system dynamics. Standish and his colleagues have used these extraordinarily careful and accurate ephemerides to measure the masses of minor planets, to demonstrate that there is no dynamical evidence for Planet X, and to tie together the solar system and extragalactic reference frames with unprecedented accuracy. His classical escape criterion for the three-body problem has been incorporated in N-body codes for decades. His remarkable work has been of great service to the astronomical community, especially NASA's program of solar system exploration. His ephemerides embody the finest craftsmanship of our discipline, and in a very real sense are the crown jewel of celestial mechanics.

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