

JD2

Models and Constants for  
Sub–Microarcsecond Astrometry

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## Summary of Joint Discussion 2, “Models and Constants for Sub-Microarcsecond Astrometry”

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The IAU Division I Working Groups established in 1997 to develop the bases and recommendations for the implementation of the International Celestial Reference System functioned during the triennium 1997–2000. They provided written reports and draft resolutions at IAU Colloquium 180, “Towards Models and Constants for Sub-Microarcsecond Astrometry” that was organized at the U.S. Naval Observatory in March 2000. The resolutions were discussed and revised at that meeting. They were made available subsequently on the web and submitted to the Resolutions Committee of the XXIVth IAU General Assembly in English and French. The proceedings of Colloquium 180 containing the reports of the Working Groups, the draft resolutions, and supporting papers is available from the U.S. Naval Observatory.

At Joint Discussion 2 (JD 2) of the IAU General Assembly in Manchester, England in 2000, reports of the IAU Working Groups were presented. The resolutions, with some editorial revisions by the IAU resolutions committee, were again discussed. The resolutions were approved at JD 2, published in the IAU newspaper in English and distributed in French to those requesting them. At the closing session of the General Assembly the resolutions were read and approved. The final version is published in the Transactions of the IAU and is available on the web page of IAU Division I at:

[http://danof.obspm.fr/IAU\\_resolutions/Resol-UA1.htm](http://danof.obspm.fr/IAU_resolutions/Resol-UA1.htm).

One concern that arose during JD2 was the choice of a standard nutation theory from competing theories under consideration. These theories were tested against observational data to try to determine the best choice. While the data supported one theory as being the best, the differences were not decisive. Atmospheric and oceanic forcing of some nutation terms further complicate the situation. Observationally based corrections to the most precise nonrigid theory will still be required to obtain the ultimate (microarcsecond) precision. A precession-nutation model denoted as IAU 2000A was proposed which is accurate at the 0.2 microarcsecond level and another model containing fewer terms, IAU 2000B, for those who only need accuracies at the 1 microarcsecond level.

This report on JD 2 contains a description of the non-rotating origin, an update of the astronomical constants report, a report of the IAG committee on constants, an update on the precession-nutation report, the results of the comparison of nutation theories, an update of the SOFA report, and abstracts of poster papers that were at the JD2.