

CONSIDERATION OF THE RESOLUTIONS

The Chairman apologized for the fact that the resolutions committee had been unable to submit the resolutions for prior consideration by the participants, but there had been insufficient time during the preceding days to resolve the differences of opinion about the form that the resolutions should take; the discussions before the coffee-break had, however, indicated that it was likely that agreement could be reached on the basis of the drafts that the committee had just prepared. English versions of the resolutions were displayed on the screen, and translations into Russian and French were made by Abalakin and Melchior.

During the consideration of the first resolution Mulholland suggested that only members of the IAU should be eligible to vote, but, in the absence of any knowledge of IAU policy on this matter, the Chairman ruled that all registered participants would be eligible. The Chairman noted that the meeting at Grenoble had recognized that the resolution concerning nutation then adopted might require amendment as a result of the later discussions at Kiev, but gave the opinion that any resolutions adopted by the symposium would not represent IAU policy, unless they were confirmed by the relevant Commissions at the General Assembly in 1979.

Resolution 1

The first resolution was put to the meeting in the following form:

IAU Symposium No. 78 recommends that the decision of the 16th General Assembly of the IAU that "the tabular nutation shall include the forced periodic terms listed by Woolard for the axis of figure..." shall be annulled and that the nutation of the true pole of date with respect to the mean pole of date should be computed for the motion of the instantaneous axis of rotation.

Fedorov proposed that the phrase "...axis of total angular momentum of the Earth" should be substituted for "...axis of rotation"; this was seconded by Vicente. After a brief discussion the amendment was put to the meeting and was lost (about 9 votes "for" and 23 "against"). Mulholland then proposed that the words "of the mantle" should be added after "rotation"; this was seconded by Melchior and adopted without objection. The amended motion was then put to the meeting and was carried by a substantial majority (about 43 votes "for" and 3 "against," with 13 abstentions).

Resolution 2

The text of the second resolution was put to the meeting in the following form:

IAU Symposium No. 78 recommends that the following set of coefficients be substituted for the corresponding coefficients in Woolard's series for the nutation in order to provide a more accurate representation of the forced nutation of the axis of rotation of the Earth due to the luni-solar perturbing forces, and that this amended series be referred to as the "IAU (1977) nutation series."

Klepczynski said that the resolution needed a general introduction which gave the principal reasons for the change. The Chairman said that the resolution committee had not had time to prepare such a text. It was agreed without objection that the Scientific Organizing Committee should be authorized to add a suitable introduction to the text of the resolution. The above form of the resolution was then generally accepted. Melchior then proposed that the resolution should include the following list of coefficients:

Period	in $\Delta\epsilon$	in $\Delta\psi \sin \epsilon$
18.6 years	+9"206	-6"843
9 years	-0.091	+0.083
1 year	+0.006	+0.058
0.5 year	+0.569	-0.520
122 days	+0.022	-0.020
27 days	0.000	+0.028
13.7 days	+0.091	-0.083

He stated that these coefficients were consistent with observations, but that they fitted recent theories to the three decimal places given.

Polozentsev inquired about the errors of these coefficients and Vicente considered that the errors should be given and that the resolution should indicate that the coefficients should be regarded as "working standards." The Chairman felt that the word "standard" should not be used in this sense, and drew attention to the following proposal for an addendum to the resolution which would allow for minor amendments to be made before publication:

Further the Symposium authorizes the Editors of the Proceedings, in consultation with the Scientific Organizing Committee, to make minor amendments to the list presented at the Symposium before its publication if further study shows that this is desirable to improve the internal consistency of the coefficients.

After some further discussion the resolution was adopted without objection (about 47 votes "for" and 0 "against," with 15 abstentions). The addendum was accepted without objection. Vicente again asked that the errors be given and the Chairman suggested that they might be given with the report of the discussions, but no such estimates have been submitted.

Resolution 3

The following resolution was put before the meeting and was adopted without objection after a brief discussion:

IAU Symposium No. 78 requests that the President of IAU Commission 4 set up a small working group of experts to prepare a fully documented proposal for the adoption of a new series for nutation at the IAU General Assembly in 1979, and recommends that the group shall take into account the desirability of basing this proposal on resolution no. 2 of this Symposium.

Resolution 4

The following resolution, which was proposed by Kovbasyuk and seconded by Melchior and Yumi, was put before the meeting and was adopted without objection after a brief discussion.

IAU Symposium No. 78 notes the interesting results obtained from the daily observations at the Dubrowski Latitude Station in Gorki and recommends that these original observations be continued systematically in Gorki.

Resolution on terminology

The Chairman stated that Fedorov had submitted a resolution concerning terminology but that the resolutions committee had not had time to consider it in detail. The original text of the resolution was then read in English and in translation in Russian and French. The Chairman considered that the English text should be carefully edited to ensure

that the intentions of the proposer were properly represented by the text and that it would then require careful consideration before being formally adopted; the session had already long overrun the allotted time and so he suggested that the text of the resolution should be published in the report of the discussions but that no vote should be taken on it. Such a resolution could be considered in 1979 after it had been thoroughly discussed.

Mulholland considered that the meeting should discuss the resolution and vote upon it, but Vicente proposed that the meeting should move to the next item on the agenda; this was seconded by O'Hora and Melchior. The Chairman suggested that Fedorov should be given the opportunity to amend the text before it is published. Gubanov suggested that the working group should consider this resolution. The meeting then decided to move to the next item on the agenda.

The amended text of Fedorov's recommendation is as follows:

...recommends that the following coordinate systems be used in the description of the rotation of the Earth:

1. a non-rotating celestial system related to the directions to stars and/or to extragalactic objects;
2. a 'conventional terrestrial system' related in a prescribed way (and approximately fixed) either to several points (observatories) on the surface of the Earth or, in the case of classical astronomical observations, to the vertical directions at these points;
3. an intermediate 'terrestrial ephemeris system' whose rotation approximates as closely as possible that of the Earth and at the same time is precisely predictable;

and notes that:

- (a) the term inertial should be avoided because of the acceleration of the geocentre;
- (b) the terrestrial ephemeris system is connected to the nonrotating celestial system by adopted equations of precession and nutation and by atomic time;
- (c) the conventional terrestrial system is related to the terrestrial ephemeris system by the coordinates of the pole and by the difference between universal time and atomic time.

Vote of thanks

The Chairman proposed a vote of thanks to the Local Organizing Committee. This was adopted with acclamation, and the meeting was then closed. At the lunch which followed the participants also agreed with acclamation that greetings should be sent to Sir Harold Jeffreys, Professor Molodensky and Professor Rochester, who had unfortunately been unable to attend the symposium.

RESOLUTIONS ADOPTED BY IAU SYMPOSIUM NO. 78

English VersionsResolution No. 1

IAU Symposium No. 78 recommends that the decision of the 16th General Assembly of the IAU that "the tabular nutation shall include the forced periodic terms listed by Woolard for the axis of figure..." shall be annulled and that the nutation of the true pole of date with respect to the mean pole of date should be computed for the motion of the instantaneous axis of rotation of the mantle.

Resolution No. 2

IAU Symposium No. 78 recommends that the following set of coefficients be substituted for the corresponding coefficients in Woolard's series for the nutation in order to provide a more accurate representation of the forced nutation of the axis of rotation of the Earth due to the luni-solar perturbing forces, and that this amended series be referred to as the "IAU (1977) nutation series."

Period	in $\Delta\epsilon$	in $\Delta\psi \sin \epsilon$
18.6 years	+9".206	-6".843
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Resolution No. 3

IAU Symposium No. 78 requests that the President of IAU Commission 4 set up a small working group of experts to prepare a fully documented proposal for the adoption of a new series for nutation at the IAU General Assembly in 1979, and recommends that the group shall take into account the desirability of basing this proposal on resolution No. 2 of this Symposium.

Resolution No. 4

IAU Symposium No. 78 notes the interesting results obtained from the daily observations at the Dubrowski Latitude Station in Gorki and recommends that these original observations be continued systematically in Gorki.

French VersionsResolution No. 1

Le Symposium n° 78 de l'Union Astronomique Internationale recommande que la décision de la 16ème Assemblée Générale de l'UAI: "les tables de nutations incluront les termes périodiques de nutation forcée données par Woolard pour l'axe de figure" soit annulée et que la nutation du pôle vrai de la date par rapport au pôle moyen de la date soit calculée pour le mouvement de l'axe instantané de rotation.

Resolutions No. 2

Le Symposium n° 78 de l'UAI recommande que le tableau de coefficients ci-après soit substitué aux coefficients correspondants des séries de la nutation selon Woolard de manière à donner une représentation plus précise des nutations forcées de l'axe de rotation de la Terre dues aux forces perturbatrices luni-solaires. La série modifiée sera appelée la "série de nutations UAI 1977."

Période	$\Delta\epsilon$	$\Delta\psi \sin \epsilon$
18.6 ans	9".206	-6".843
9 ans	-0.091	0.083
1 an	0.006	0.058
0.5 an	0.569	-0.520
122 jours	0.022	-0.020
27 jours	0.000	0.028
13.7 jours	0.091	-0.083

Resolution No. 3

Le Symposium n° 78 de l'UAI demande au Président de la Commission 4 de former un groupe de travail constitué d'experts afin de préparer une proposition bien étayée pour l'adoption d'une nouvelle série de nutations à l'Assemblée Générale de l'UAI en 1979. Le Symposium demande que cette proposition tienne compte de la nécessité d'établir la nouvelle série à partir de la résolution n° 2 de ce Symposium.

Resolution No. 4

Le Symposium n° 78 de l'UAI relève l'intérêt des résultats obtenus à partir des observations journalières de l'Observatoire de latitude Dubrowski à Gorki et recommande que ces observations originales soient poursuivies systématiquement à Gorki.