(b) Installation of a PZT chain in the southern hemisphere, say − 34°, was also recommended at the same time. This proposal was discussed again at the IAU Colloquium No. 1 in La Plata, 1968, which strongly supported this programme especially with the collaboration of Australia, South Africa, Chile and Argentine. Regrettably, there was no progress other than the installation of a PZT at Punta Indio, Argentine in 1968.

It is recommended that this proposal be discussed in Sydney and a further resolution endorsed by Commission 19, otherwise the future of this programme seems to be very hopeless. It appears probable that it would not be likely to attract sufficient support especially in Australia and South Africa in spite of the efforts made by the astronomers concerned. No information was available from Chile and Argentine by this date.

4. *Cooperation of the Chinese Observatories*

It is very desirable to have the cooperation of Tientsin and Shanghai Observatories for the work of the IPMS. The former has been equipped with a ZTL-180 and the latter with an astrolabe and a transit instrument, but no cooperation has so far been given by them, presumably because they were not members of the IAU. The problem should be discussed at the coming General Assembly and even earlier if possible.

5. *Advantage of the new techniques*

Many observatories are interested in the use of the new techniques such as laser, VLBI and Doppler observation of satellites. Results by these new techniques should be included in the study of polar motion and its relevant problems.

6. *Other matters*

(a) The visual zenith telescope of Belgrade was covered with aluminium foil to protect the telescope against the unfavourable effect of the surrounding air temperature. Thermal effects seem to be substantially diminished. This is especially evident in the reading of Talcott's levels.

(b) The Director of the IPMS visited or was invited to the following observatories: Carloforte in 1970 after the General Assembly in Brighton; Moscow State Astronomical Observatory of Shternberg, Pulkovo Observatory, Kiev Observatory, Astronomical Institute of Tashkent and Kitab latitude station in 1971; Carloforte (including Cagliari), Belgrade Observatory, Jósefostaw and Borowiec in 1972. The purpose was to see the observatories and/or discuss with them the studies on observation, method of reduction, polar motion and so on.

S. YUMI
Director, IPMS

REPORT OF THE BUREAU INTERNATIONAL DE L'HEURE

Since the XIVth General Assembly, regular publication has continued of the coordinates of the pole, and of UT1–UTC, obtained by a synthesis of all the available data. In 1971, the data of 81 instruments were used (52 series of latitudes, 61 series of UT). Since 1967, the evolution in the number of instruments is shown in Table 1.

Table 1.

	Number of instruments						
Year	astrolabe	PZT	circum-zenithal	zenith telescope	visual transit inst.	photoelect. transit inst.	Total
1967	18	9	2	18	22	10	79
1971	21	12	2	20	15	11	81

The improvement of the equipment and also of the weighting procedures has lead to a steady decrease of the standard errors, as shown in Table 2.

Table 2.

	Standard errors of raw 5-day values		
	x	y	UT
1967	0".016	0".015	0^s.0012
1971	0".011	0".011	0^s.0010

The UT results revealed some rapid irregularities of the Earth's rotation such as the one of March 1971, which may be associated with the circulation of the atmosphere. The polar path is very regular; however, a new change in amplitude of the Chandlerian wobble occurred in 1967 and was completed in about 6 months, without change of the mean pole, nor of the phase, thus confirming Runcorn's hypothesis of equatorial impulsive torques.

The following studies were performed.

1. Special attention was given to the results of new techniques for the polar motion determination, mainly by laser and Doppler measurements on artificial satellites. The Doppler results of the Dahlgren Polar Monitoring Service (DPMS) have a precision which almost reaches that of the classical data. However, systematic differences, some of them as yet unexplained, prevented the inclusion of the results with those of the classical instruments. Theoretical studies, as well as experiments and tests, are in progress for Doppler and laser observations (in collaboration with the DPMS and with French groups).

2. A study of the stability of classical instruments was completed and published in the Annual Report for 1971: this emphasizes the quality of the PZT both in short and medium terms. The study also makes clear that much precision could be gained by (a) full-time use of the existing instruments, (b) the installation (or transfer) of a few instruments in well-selected sites.

3. As global corrections for the short-term irregularities of UT due to the earth-tides and the diurnal nutation are not fully satisfactory, corrections were prepared for individual series. We are ready to apply these corrections for the 1972 data. On the 5-day values of UT1 the corrections may bring changes of more than 2 ms which is of the same order as the accidental errors: the corrections should be applied.

4. In May 1971, the BIH began to operate a rapid service under a contract for the Jet Propulsion Laboratory, giving x, y, UT1 — UTC on a weekly basis with a delay of 3 days. During critical periods of the Mariner 9 program, daily results were sent with one day delay. The results of the rapid service were found to be usually in agreement with the definitive ones to less than 0".03 for x and y, 0^s.003 for UT1. This was made possible through the diligence of 16 selected observatories which reduced and sent their data with minimum delays. The increasing requests for the results of the rapid service make it desirable to establish it on a permanent basis, with more satisfactory financing.

B. GUINOT

Director

REPORT OF THE WORKING GROUP ON THE POLE COORDINATES

The Working Group on the Pole Coordinates was organized by the Scientific Council of the IPMS in accordance with the request by Commission 19 at Brighton, 1970. The following were nominated: S. Yumi (President), E. P. Fedorov, E. Fichera, B. Guinot, G. Hall, W. Markowitz, P. Melchior, R. O. Vicente.

The terms of reference are to organize international cooperation and to promote international agreement on

(a) The collection of the original data (or copies) of past ILS observations;

(b) a new and homogeneous reduction of the ILS visual results;