6. ASTRONOMICAL TELEGRAMS (TELEGRAMMES ASTRONOMIQUES)

(Committee of the Executive Committee)

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I. INTRODUCTION

The year 1990, within the triennium covered by the present report, marked a number of significant anniversaries for the Central Bureau, including 70 years since its foundation at the Brussels Observatory, 25 years since the transfer of the Bureau's operations to the Smithsonian Astrophysical Observatory (and 22 years of Dr. Marsden's service as Director), and the issuance of the 5000th Circular. The amount of work done at the Bureau has increased enormously in this time, but especially within the past decade, as a result of the demands of modern astronomers and astrophysicists who are responding to the technological advances that have revolutionized observing and computing methods. At the same time methods of rapid communication have undergone a transformation that still continues. Appreciation is due for the support provided to the Bureau by the Smithsonian Astrophysical Observatory, but special gratitude must be expressed to Dr. Marsden and members of the staff and volunteers for their long hours of work and dedication to the needs of astronomers around the world for rapid access to information.

During the triennium the Commission lost through death three long-time members and former members: Leland E. Cunningham (May 31, 1989), whose enormous contributions to the work of the Commission go back to the development of a very straightforward method of preliminary orbit determination and its application to numerous comets and earth-approaching minor planets from the 1930s to the 1950s, the recognition of the earliest observation of Hermes, the clever recovery of comet Gale in 1938 and discovery of a rather notorious comet in 1940, and his systematic recoveries and observations of faint comets and involvement with the Lick proper-motion program and Palomar Sky Survey discoveries of the late 1940s and early 1950s; Edgar Everhart (Jan. 14, 1990), whose discovery of two comets in the 1960s inspired him to examine critically selection effects in this process, who in the 1970s devised a convenient new method of numerical integration and applied it to examine orbits statistically, who constructed an inexpensive measuring engine and encouraged others to do likewise, and who used the engine for six comet recoveries and other astrometric observations during the early 1980s; and D. Ya. Martynov (Oct. 22, 1989), whose research was in other areas of astrophysics (although he did some cometary astrometry in the 1940s), but who as Director of the Sternberg Astronomical Institute played a crucial role in the often very difficult task of communication between East and West during the darkest days of the Cold War.

The death of Frances W. Wright (July 30, 1989) also warrants special mention. She was never a member of the Commission, and few astronomers nowadays realize the debt the Commission owes her. Renowned for her work on meteors, the Magellanic Clouds and celestial navigation, she had from 1955 to 1960 complete responsibility for the receipt and dissemination of astronomical telegrams in North America and the preparation of the old *Harvard Announcement Cards*. Her name never appeared on the telegrams or the *Cards*, and in related correspondence she always modestly described herself as "Assistant to Dr. Whipple".

E. Roemer
President of the Commission

II. REPORT OF THE CENTRAL BUREAU FOR ASTRONOMICAL TELEGRAMS

During the triennium the Central Bureau issued 'telegram books' and *Circulars* as follows:

	Telegrams	*Circulars*
1987 July-Dec.	29	Nos. 4413-4521
1988 Jan.-June	21	Nos. 4522-4619
1988 July-Dec.	14	Nos. 4620-4696
1989 Jan.-June	24	Nos. 4697-4799
1989 July-Dec.	35	Nos. 4800-4936
1990 Jan.-June	27	Nos. 4937-5045

In the previous report it was noted that SN 1987A had a 'permanent' effect in the sense that it had caused the preparation of the *Circulars* to be tied to the need to make them available at any time in the Central Bureau's rapidly-expanding computer service, rather than to send them to be printed during 'working hours'. The timeliness of the computer service seems now in turn to have resulted in a permanent increase in the rate at which the *Circulars* are prepared, for they are obviously very convenient for disseminating general astrophysical news, and the above tabulation shows that it is a rare half-year that does not produce 100 issues. Of course, much of this increase was also due to the record number of comets in 1987, and again in 1989, also to the record number of new earth-approaching minor planets in 1989, as well as to the record number of supernovae in 1988, and the strong likelihood that this record would again be broken in 1990. The computer service *per se* was augmented, beginning in July 1988, with direct e-mail delivery of the *Circulars* to those subscribers who could conveniently be reached by SPAN or BITNET. It is often the case, however, that these e-mail deliveries go astray, and subscribers are kindly requested to obtain missing issues from the computer service, rather than by requesting the Bureau to transmit them again. It is good to see India added to the list of countries with e-mail recipients, but there are no direct subscribers in South America and still no possibilities for serving potential subscribers in eastern Europe, the U.S.S.R. and China. The world over, e-mail/computer-service subscribers as yet account for less than 25 percent of the total, so the printed *Circulars* are still essential and should be considered the 'official' version when they differ from the electronic version. The appearance of the printed *Circulars* was greatly improved in Apr. 1988 with the introduction of TEX and a laser printer.

The Bureau's telegram service also continues to be essential for relaying limited information rapidly to several countries, and it is likely to continue to be so for the foreseeable future. The generosity of the Ionospheric Prediction Service, Sydney, in redisseminating the telegrams in Australia and New Zealand is again greatly appreciated, and in Apr. 1989 R. Thompson succeeded P. Davies in carrying out this work. The latest version of the code used for the telegrams appears in *IAU Inf. Bull.* No. 46 (1981), and it will shortly be reprinted. In Sept. 1988 the Bureau's old mechanical TWX machines were eliminated in favor of the use of MicroVAX computers for both the transmission and the receipt of telexes and telegrams, a dedicated line to Western Union ensuring that messages are in fact received promptly.

Although interest in and usage of the Bureau's services are currently higher than ever before, the progressive decline in the number of actual subscribers to the services has been the cause of some concern. By early 1990 the number had diminished to 700 from about 760 in Apr. 1986, when the accounting system was changed from a per-issue charge to a per-month charge. In 1982 the number of subscribers was over 800, and in 1979 it approached 1000. The recent decline is clearly attributable to the ease with which copies of the electronic version of the *Circulars* can be disseminated and posted in 'bulletin boards'. On the other hand, given the increased number of *Circulars*, the Bureau's costs have obviously been rising. There has been little response to requests that electronic 'pirates' consider taking out subscriptions, at least for the printed version. Accordingly, at the beginning of Sept. 1990 the monthly subscription rates for the printed *Circulars*, unchanged since 1986, were increased by $33\frac{1}{3}$ percent (to \$10.00 and \$6.00, depending on whether invoices are required or not), while the additional fees for the electronic version were increased by $66\frac{2}{3}$ percent (to \$12.50 and \$7.50, respectively). Enquiries from potential subscribers are very welcome and should be sent to the postal, telex or e-mail addresses given above.

B. G. Marsden
Director of the Bureau