ANNUAL REPORT OF THE CENTRAL BUREAU FOR ASTRONOMICAL TELEGRAMS

1991

1991 was yet another record year of activity for the Central Bureau, the total of 267 *Circulars* issued being a substantial increase over the previous record of 240 in 1989. As is usual nowadays, the number of *Circulars* bore little relation to the number of 'telegram books' issued, the 44 of the latter in 1991 being close to the recent average.

The Bureau's activity was at or above record levels in all four of its traditional areas, namely, for comets, earth-approaching minor planets, novae and supernovae. The 62 designations of supernovae in 1991 (although two were not announced until 1992) represented a stupendous increase over those of the previous record year of 1990 (which had 36, including one not announced until 1991). The 35 designations of comets (although one was not announced until 1992) equalled those of the record year of 1989. The Bureau also handled a record 35 earth-approaching minor planets that had been given 1991 provisional designations, as well as no fewer than seven galactic novae (and novae in the LMC and M31). One of the novae was first detected as an x-ray transient, and one of the minor planets had an orbit so nearly similar to that of the earth that there was consideration that it might instead have been a rocket used to launch a space probe in the 1970s, but this point could not be fully resolved.

The Compton Gamma Ray Observatory was launched and yielded observations of γ-ray bursts, and there was a suggested detection of γ-ray pulsars; observations in Japan of an intense display of Perseid meteors revived speculation that the parent comet P/Swift-Tuttle might return in 1992; thermal emission was reported from Saturn and the dark side of Venus; there was a detection of infrared emission arcs near the poles of Jupiter, and CO and HCN were found in the atmosphere of Neptune; an outburst was observed of SVS 13, the source that excites several Herbig-Haro objects, and there was continuing interest in the Galactic center region.

The number of subscribers to the printed *Circulars* was unusually constant during the year, ranging between 736 and 712, although the minimum occurred in December, and a further drop was indicated in early 1992. The year 1991 ended with 236 subscribers to the Computer Service; of these 167 have the *Circulars* directly addressed to them for e-mail delivery, but more than the usual number of difficulties arose with this during the year, particularly with Internet addresses in certain countries.

Associate Director Daniel W. E. Green prepared the lion's share of the *Circulars* during the year, and he was also responsible for the telegram accounts. Gareth V. Williams provided assistance with proof-reading and orbit computations. He also made the software changes necessary for the conversion from B1950.0 to J2000.0. This was particularly true in the case of the Computer Service, and he took the opportunity of the conversion to redesign this Service, making it much more "user friendly". The changeover to J2000.0 was actually made on the afternoon of December 24, a week ahead of the target date set in association with Commission 20. Richard Thompson and Patrick Phelan continued to undertake the redissemination of telegrams to Australia and New Zealand. Donna Thompson again served as the Bureau's administrative assistant, with help from student assistants Bridget McCabe and Durstan Selfridge early in the year and from Andrew Noymer from May onward.

Brian G. Marsden
Director of the Bureau