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The rate of publication of the *IAU Circulars* continues to increase, the 278 issued in 1998—five more than in 1997—representing another record. As in other recent years, the main reason for the increase has been the great number of discoveries of supernovae and comets. Some 56 percent of the *Circulars* issued contained items on supernovae, while 47 percent contained items on comets.

In addition to the 158 supernovae reported in 1998 data during the year, there were also reports of 29 supernovae from images obtained in 1997 and earlier. Fully one-quarter of the supernovae were fainter than mag 22.5 at discovery, with two of them recorded at mag 26.8. Three supernovae—1998S in NGC 3877, 1998aq in NGC 3982 and 1998bu in NGC 3368—attained mag 12 visually, and the first of these was the single most popular topic during the year, with observations of it reported on 19 different *Circulars*.

As for comets, even excluding the five predicted recoveries of periodic comets and the five belated discoveries from images obtained in 1997, the remaining 46 handsomely broke the previous annual record. The five belated discoveries were obtained with the LASCO white-light coronagraphs aboard the Solar and Heliospheric Observatory (SOHO) spacecraft, and SOHO was responsible for 16 additional comets found before the temporary failure of the mission in June. All but two of these SOHO comets appear to have been members of the Kreutz sungrazing group that did not survive perihelion passage. One of the exceptions, C/1998 J1, is the only SOHO comet to be observed subsequently from the ground, and this was the second most popular topic of the year, with mention on 12 *Circulars*. The ground-based data revealed a fundamental flaw in the positions obtained from SOHO—and thus with the orbital solutions. Toward the end of 1998 a start was made on rectifying this problem and revising the earlier results. As noted in the report of the Minor Planet Center, 16 comets were also credited to the "LINEAR" program: in addition, an apparently asteroidal object found by LINEAR could be identified with an "asteroid" observed at Turku in 1939 having an apparently cometary orbit, and the eventual recognition of a coma and tail has now allowed the object to be classified as comet 139P/Väisälä-Oterma.

Four galactic novae and ten γ-ray bursters were reported during the year. Although one of the γ-ray bursters was discussed on as many as ten *Circulars*, coverage was down considerably from the previous year, thanks to the "GCN" alerts on these objects that are being issued by the NASA Goddard Space Flight Center.

The two new, faint, distant, satellites of Uranus, the discovery and initial follow-up of which were recorded on *IAU Circulars* last year, were recovered in 1998, and the determinacies of their orbits were improved by the recognition of observations on a pair of nights in 1984. The brighter satellite was found to have an eccentric orbit with a period of 3.5 years, the longest for any known satellite in the solar system.

Although it was the subject of only three *Circulars*, the most "notorious" event (by far!) of the year was the announcement, on March 11, that the asteroid 1997 XF_{11} would pass close—perhaps extremely close—to the earth in 2028. As has been noted many times, the possibility of an approach to only tens of thousands of kilometers was a valid deduction from orbital elements published five days earlier by the Minor Planet Center from a three-month arc of observations. This calculation was fully confirmed by others, and the purpose of the announcement was to draw attention to the need for further observations of the object, which was largely being ignored. Unfortunately, the announcement was immediately misinterpreted by some as indicating that there was a significant probability (perhaps 0.1 percent or more) that the object would strike the earth in 2028; and a simultaneous message in the World Wide Web, improperly distributed as some kind of "official press release" by the IAU, did nothing to disspell this belief. The main point of the WWW message was to provide ephemerides to allow a search for past observations of the object, and indeed, such observations from 1990 were rapidly forthcoming as a result. These observations showed that 1997 XF_{11} would clearly pass at more than twice the distance of the moon, the initial suggestion that passage within the moon's distance was "virtually certain" having arisen from the hasty use of a 1σ error estimate, rather than an appropriately larger value. As it turned out—although this point was never in fact discussed on an *IAU Circular*—the 1990 observations were essential for quickly certifying 1997 XF_{11} as "safe", for the otherwise uncertain effect of the earth's perturbations on the object in 2028 meant that there really was a 0.001-percent probability that it would collide with the earth in 2040 (a result also confirmed by others). This is about an order of magnitude larger than the annual probability of impact by an unknown object of comparable size (perhaps 2 km), a circumstance that is quite unprecedented for a date only a few decades hence.

The "free" distribution of the *Circulars* in the WWW has meant that the number of subscribers to the printed edition has continued to fall, from 365 in January to 336 in December. As noted in the report of the Minor Planet Center, the decrease in the number of subscribers to the Computer Service, while understandable, is also cause for concern, given the Bureau's strong dependence on subscriptions for supporting a staff (about 1.5 people) that is at least available for action 14 or more hours a day and seven days a week. As in recent years, most of the *Circulars* in 1998 were prepared by Bureau Associate Director Daniel Green, with backup from the undersigned. Responsibility for the administrative work of the Bureau has rested mainly with Muazzez Lohmiller, together with Donna Thompson through July. Gareth Williams continued very effectively to maintain the Bureau's presence on the WWW (URL `http://cfa-www.harvard.edu/iau/cbat.html`).

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