

THE ASTRONOMER Electronic Circular No 427 1990 JULY 6 20.30UT  
 Ed: Guy M Hurst, 16, Westminster Close, Kempshott Rise, Basingstoke,  
 Hants, RG22 4PP, England. Telephone: (0256) 471074 Int: +44256471074  
 Telex: 94082518 Answerback: TAGUY Microlink: MAG60138  
 JANET: GMH @ UK.AC.CAM.ASTRONOMY.STARLINK or GUYH@UK.AC.SUSSEX.CLUSTER

The following items have been culled from recent IAUCs and should be of interest:

## 1990 MF

Improved orbital elements from 12 observations June 22-28:

T = 1990 Aug. 9.371 ET Peri. = 112.828  
 e = 0.44883 Node = 210.886 1950.0  
 q = 0.95087 AU Incl. = 1.844  
 a = 1.72519 AU n = 0.434959 P = 2.27 years

1990 ET	R.A. (1950)	Decl.	Delta	r	V
June 30	14 20.20	+9 43.3	0.060	1.059	14.0
July 2	14 18.28	+15 33.5			
4	14 15.85	+23 17.5	0.045	1.040	13.7
6	14 12.40	+33 37.1			
8	14 06.58	+47 05.5	0.035	1.023	13.8
9	14 01.68	+54 56.6			
10	15 53.79	+63 17.0	0.032	1.015	14.1
11	15 38.9	+71 45.6			
12	15 01.3	+79 52.8	0.033	1.007	14.8
13	11 59	+86 07.8			
14	6 31.1	+83 21.7	0.037	1.000	15.7
15	5 27.8	+77 29.7			
16	5 07.5	+72 05.2	0.042	0.993	16.6

(IAU 5044)

## VY AQUARI

This object is again in outburst. Visual magnitude estimates:

1989 Sept. 30.88 UT, 115.3 (A. Boattini, Florence, Italy); Oct. 27.76, 13.4 (P. Schmeer, Bischmisheim, West Germany); Dec. 3.76, 114.2 (Boattini); 1990 June 24.00, 16.0 (Boattini); 28.88, 114.0 (A. Pearce, Scarborough, W.A.); 30.03, 112.5 (Schmeer); 30.75, 10.4 (A. Jones, Nelson, New Zealand); 30.78, 10.5 (Jones); July 1.94, 10.6 (Schmeer); 2.03, 10.6 (Schmeer); 3.86, 10.5 (Pierce)

## SUPERNOVA 1989X IN ANONYMOUS GALAXY

According to IEVS 3465, M. Lovas, Konkoly Observatory, has discovered a supernova at R.A. = 7h23m34s.5, Decl. = +64d00'29".8 (equinox 1950.0), 5".8 to the southwest of the center of an anonymous galaxy. The object was recorded on 1989 Nov. 30.0875 UT at mag about 17.5. The galaxy itself is of mag 17.

## PERIODIC COMET SCHWASSMANN-WACHMANN 3 (1989d1)

Total visual magnitude estimates: June 15.88 UT, 11.6 (A. Pearce, Scarborough, W.A., 0.41-m reflector); 23.45, 11.4: (C. S. Morris, Pine Mountain Club, CA, 0.26-m reflector); 24.45, 12.0 (A. Hale, Las Cruces, NM, 0.41-m reflector); 25.88, 12.3 (Pearce); 26.88, 12.4 (Pearce); 27.87, 12.6 (Pearce); 28.88, 12.5 (Pearce); 30.89, 12.4 (Pearce).  
 IAU 5046