ASTROMETRIC POSITIONS
OF THE COMET 1995/O1 (HALE-BOPP)

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Abstract. Precise positions of the comet 1995/O1 (Hale-Bopp) observed in Bucharest are presented. These observations were made with a 380/6000 mm astrograph. We used astrophotographic plates and an Ascorecord measuring machine.

Key words: comet, astrometry.

The comet 1995/O1, very well known by the astronomers (professionals and amateurs) as the comet *Hale-Bopp*, offered us a brilliant cosmic show. The computed preliminary orbit reveals that the comet 1995/O1 is for the first time when it passes across the Sun. Systematic observations of its "atmosphere" allow the identification of new chemical compounds (Circular 6568, 6573, 6614, 6625, 6631) never before reported for any other comet.

During autumn 1996, several nights of observation allowed us to perform precise astrometric positions of the comet. The observations were made with the *Mertz-Prin* astrograph (380/6000 mm) from Bucharest.

These positions were calculated using 5–10 PPM reference stars, chosen around the comet, not farther than 1° from the center of the plates. From the α_i, δ_i coordinates (corrected with the proper motions) of the reference stars, and α_0, δ_0 of the center of the plate, the normal coordinates X_i, Y_i were computed. Both Turner's (constants) and Schlesinger's (dependences) methods (Brouwer & Clemence 1961) were used to compute the normal coordinates of the comet. Then, starting with the normal coordinates X, Y, the topocentric coordinates α, δ, of the comet were determined.

The results are presented in Table 1. The first column contains the date of the observations (year, month, day with fraction of day); the topocentric right ascension and the declination of the comet for the 2000.0 epoch are presented in the second

and the third column, respectively; the last column contains the number of the reference stars used for computing.

Table 1

Astrometric positions of the comet 1995/O1 (Hale-Bopp)

DATE UT	$\alpha_{2000.0}$	$\delta_{2000.0}$	N
1996 09 10.76657	$17^h 33^m 34^s.69$	$-6°00'26''.0$	5
" 09 10.77453	17 33 34 .45	-6 00 24 .3	5
" 09 10.73788	17 33 10 .43	-5 57 19 .0	10
" 09 11.75034	17 33 10 .10	-5 57 16 .7	10
" 10 03.71416	17 29 51 .17	-4 52 15 .2	8
" 10 15.69075	17 32 18 .87	-4 16 34 .4	9
" 10 15.69802	17 32 18 .99	-4 16 33 .3	9
" 11 04.67492	17 42 05 .11	-3 04 25 .2	10
" 11 04.68219	17 42 05 .34	-3 04 22 .6	10
" 11 12.66901	17 47 44 .94	-2 27 43 .1	7
" 11 12.67697	17 47 45 .29	-2 27 42 .8	7

These astrometric observations were already reported to the Central Bureau for Telegrams of the International Astronomical Union and used to improve the orbital elements of the comet.

REFERENCES

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