COMET NOTES

ELIZABETH ROEMER

Lunar and Planetary Laboratory
and
Department of Astronomy
University of Arizona

Received July 16, 1968

Some compensation for the slow start to new comet discoveries in 1968 was achieved during June and July with the discovery of two comets bright enough for widespread observation by both amateurs and professionals. Comet 1968 *b* was of 9th magnitude when it was located visually on June 15 by Mark Whitaker, Bishop, Texas. An independent photographic discovery was made on June 17 by Norman G. Thomas of the Lowell Observatory, who noted the comet on plates taken for the minor planet (1566) Icarus, which was then in the course of an interesting passage close by the earth. Comet Whitaker-Thomas was a centrally condensed diffuse object moving nearly 3° per day northeastward in Serpens at the time of discovery. The first orbit determination, by S. W. Milbourn of the British Astronomical Association, was based on Thomas' approximate discovery position and on accurate positions by M. Miranian, Washington, on June 19.2 and by R. L. Waterfield, Woolston, on June 21.0. Before discovery, but following the perihelion passage of Comet Whitaker-Thomas 1.2 a.u. from the sun on June 4, the comet had passed within little more than 0.2 a.u. of the earth. Although the comet must have been relatively bright and in convenient position near evening quadrature, an earlier discovery apparently was missed through the fact that comet hunters tend to devote their greatest efforts to searches of the evening and morning skies closer to the sun. The motion of the comet after discovery, rapidly northward in an orbit of inclination 62°, soon brought it into very convenient position for observation in the evening sky from the Northern Hemisphere.

Photographs of Comet Whitaker-Thomas by G. Van Biesbroeck and by E. Roemer with the 61-inch reflector of the Lunar and Planetary Laboratory showed an essentially stellar nucleus, of magnitude 14.5 on June 19 and 16.0 on June 27. Although the

comet appeared as a rather large and conspicuous diffuse patch with the 6-inch finder, the coma was an almost invisible feature on photographs taken for astrometric purposes at the 13.5 focal ratio of the Catalina reflector.

Because of a fourfold increase in the geocentric distance within the six weeks following discovery, the initial fading of Comet Whitaker-Thomas was quite rapid. By early August the total brightness, calculated from the distances given in an improved ephemeris by B. G. Marsden, will have decreased to at least magnitude 13. The brightness of the nucleus, the important factor in continuation of observations, by that time probably will have decreased to 18th magnitude. Thus it may not be possible to photograph the comet after September.

The third new comet of 1968 was found by Minoru Honda on July 6 moving northward in the morning sky in Auriga. Early confirmatory observations of the comet, which was described by the discoverer as of 8th magnitude, without central condensation, were made by Edgar Everhart, Mansfield Center, Connecticut, and by J. E. Bortle, D. Milon, and K. Simmons. An eleventh magnitude central condensation was detected by Simmons in a coma 3′.5 in diameter. The daily motion, some 20′ northward, gave the suggestion that the comet might be in the portion of its orbit beyond the sun, as seen from the earth. But it seemed safer to wait for an orbit determined from more accurate positional data before making a guess regarding future observational circumstances.

Mrs. G. Kastel, Institute for Theoretical Astronomy, Leningrad, has communicated extensive lists of positions of comets Tago-Honda-Yamamoto, 1968 *a*, and Ikeya-Seki, 1967 n_2, measured from plates taken during April and May by N. S. Černyh, Crimean Astrophysical Observatory, and by H. K. Raudsaar, Tartu. Additional observations of the former comet, which moved back from the evening to the morning sky well north of the sun in June, came also from M. Antal, Skalnaté Pleso, and from R. L. Waterfield.

Comet Ikeya-Seki was photographed with the Catalina reflector on May 26 as a well-condensed object of magnitude 14.9 embedded in a weak trace of coma. The comet at the same time was easily visible with the 6-inch finder, with an estimated total magnitude of 10 or 11 and possibly a short tail extending northeastward.

P/Schwassmann-Wachmann 2 also was photographed with the Catalina telescope on May 26 as it passed near the Praesepe star

cluster. The comet was seen with the 61-inch reflector as a small diffuse spot of 15th magnitude. Photographically the image was not quite stellar and of magnitude 17.3 and showed little trace of the coma that was noted visually.

P/Schwassmann-Wachmann 1, when observed on June 27, was seen visually as a small diffuse spot, the usual sign of outburst activity. A 30-minute photographic exposure showed an essentially stellar condensation at the edge of a semicircular coma of radius about 0.′1 and extending to the north and east. The condensation was of magnitude 17.7, but the diffuse envelope was bright enough to make a significant contribution to the total light.