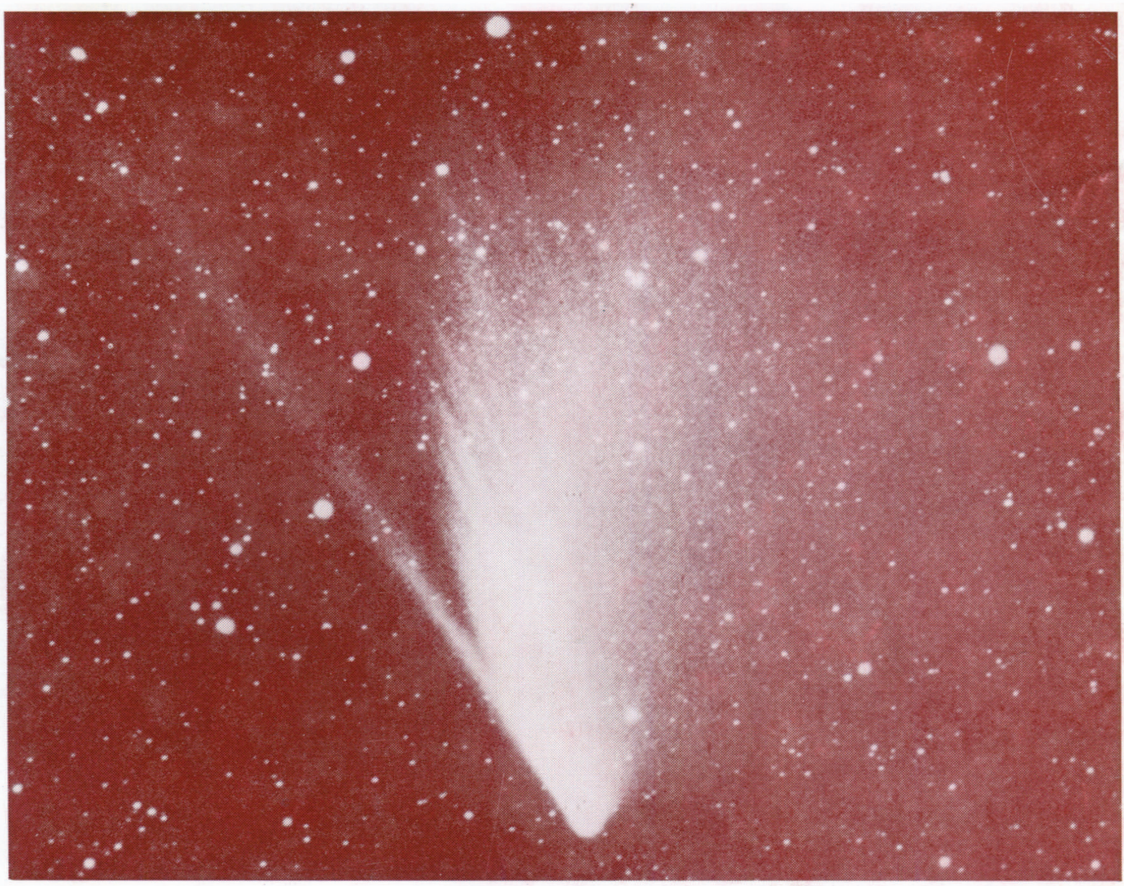
INTERNATIONAL ASTRONOMICAL UNION

SYMPOSIUM No. 45

THE MOTION, EVOLUTION OF ORBITS, AND ORIGIN OF COMETS

Edited by G. A. CHEBOTAREV, E. I. KAZIMIRCHAK-POLONSKAYA, and B. G. MARSDEN



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D. REIDEL PUBLISHING COMPANY / DORDRECHT-HOLLAND

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This volume contains the proceedings of IAU Symposium No. 45, held in Leningrad, U.S.S.R., in August 1970. Eighty-five papers (a few of them as abstracts only) and much of the discussion following them are included. While the subject dates back many centuries the advent of computers has recently brought about a revival of interest and great progress towards the solution of many outstanding problems has been made.

The principal topics covered in this volume include the development of analytical and numerical methods for the construction of accurate theories of the motions of comets and minor planets and the evolution of their orbits over intervals of many centuries, and in some cases millenia; investigation into the effects of non-gravitational forces on the motions of comets and into the physical nature of these forces; current research on the diffusion of the orbits of long-period comets; the form and dimensions of the Oort cloud of comets that surrounds the solar system; and the origin of comets. Other material presented includes the association of comets with meteor streams and possibly with some of the asteroids; attempts to determine the masses of the major planets from analyses of the observations of comets and asteroids; and the requirements for future inter-national cooperation in the observation and calculation of orbits and ephemerides of comets.

A large proportion of the papers are contributed by Soviet astronomers, and in many instances their work is presented here in English for the first time; and to round off the volume there are contributions from astronomers from the United States, South America, Australia,and Eastern and Western Europe.

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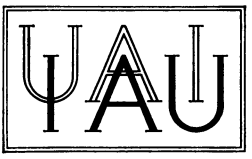

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To the memory of

MIKHAIL FEDOROVICH SUBBOTIN

(1893–1966)

and

SAMUIL GDAL'EVICH MAKOVER

(1908–1970)

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