

Prof. K. Hirayama reported progress on his researches of the asteroid families. Out of the 1177 asteroids listed in *Kleine Planeten* for 1932, he could select 34 asteroids belonging to the Themis family, 34 to the Eos family, 22 to the Coronis family, 16 to the Maria family and 78 to the Flora family. The total number of the asteroids belonging to the five principal families are now 184 or 15.6 per cent. of the total number. This percentage was 14.0 in the first paper written in 1923 and 14.9 in the second paper written in 1927. This increase of percentage seems to indicate that smaller asteroids are more liable to belong to the families.

He also drew attention to the Hilda-type planets, which are 10 in number. The limits of the mean motions of these planets are $447''$ – $460''$ and the critical argument, i.e. “(mean longitude of asteroid) – (mean longitude of Jupiter) + longitude of perihelion of asteroid,” is limited to 294° – 59° , i.e. to an interval of 125° . He recommended we should use the term “Hilda group” for these planets, in the same sense as we refer to the “Trojan group.”

E. Delporte reported that he had re-found 594 Mireille, which had not been observed since 1919, and attributed success in this case to the use of Metcalf’s method.

F. Kępiński has published: *The return of the periodic comet Kopff 1906e* (Varsovie, 1932); *The motion of the periodic comet Kopff 1906e*, Part 1—presented to the Académie Polonaise des Sciences. With the help of this Ephemeris the comet was re-found on 1932 May 25, at Cordoba.

M. Kamiński has continued his investigations of the motion of Comet Wolf (1). Fifty normal places derived from 1888 observations covering 6 returns during the period 1884–1919 can now be represented with a mean error of $\pm 1''.77$ on the assumption that the mean daily motion of the comet is diminishing by the amount of $0''.00000042$ in one day. The results are published in *Publications of the Astronomical Observatory of Warsaw*, vols. IV, V, VI, and a further article “Ueber die Bewegung des Kometen Wolf (1) in dem Zeitraume 1884–1919” has been awaiting publication since April 1931.

Attention was also drawn to the following papers which have recently appeared:

G. Fayet: “Les Petites Planètes” (*Ann. du Bureau des Longitudes*, 1932); “L’Étude des Excentricités des Orbites Cométaires”; “Tables de Petites Planètes.”

P. E. de la Villemarque, S.J.: “(113) Amalthea” (*Annales de Zé-Sé*, Tome XVII, Fasc. v).

D. Brouwer: “Theory and Tables of the Motion of (588).”

E. W. Brown and D. Brouwer: “Tables for use in the development of the disturbing function.”

Reference was also made to the forthcoming *Research Surveys of the Minor Planets* to be published as a Lick Observatory publication in two volumes and to a projected catalogue of general cometary data by Bobrovnikoff.

Commission 22. (ÉTOILES FILANTES.)

PRESIDENT: Prof. Olivier.

SECRETARY: M. F. De Roy.

The Rev. T. E. R. Phillips submitted a proposal from Commission 16, suggesting that Commission 22 should take from them the subject of comets. After some discussion, in which it was pointed out that, on practical grounds, the methods of observation should outweigh any theoretical considerations in the matter, the

following motion was moved by Prof. Öpik, seconded by Prof. Boothroyd, and carried:

“Commission 22 considers that it is not desirable that Comets should be joined to their subject.”

The Report of the Commission was presented for discussion, and approved with some minor additions. The following resolution moved by Prof. Öpik, and seconded by Dr Fisher, was carried for submission to the General Assembly:

“The Union thinks that it is very desirable that the activity of the Meteor Expedition in Arizona be continued for a second year, to get a more complete check on the annual distribution of meteoric activity, and to fill out gaps produced by clouds and moonlight during the first year.”

Dr Bosler gave some interesting details about the probable location of the Chinguetti meteoric mass, and discussed the possibility of recovering it, which appears to be considerable. The President pointed out the great interest of the study of this meteor, also on theoretical grounds.

Three suggestions contained in a letter to the Commission from Messrs J. E. Gedal, G. M. B. Dobson and Prof. Strömngren, were referred to the President for further consideration.

The Commission voted the following resolution, moved by Dr Fisher and seconded by Dr Bosler, for submission to the General Assembly:

“The Union express the opinion that it would be highly desirable to rediscover and to study completely the great so-called Chinguetti meteoric mass in the Adrar, North Africa. They very specially draw the attention of the French Government to the urgent necessity for organizing a scientific expedition entrusted with this study. Any further delay would be such as to render the exploration of this interesting meteorite much more difficult.”

The following resolution, moved by the President and seconded by Dr Fisher, was also voted for submission to the General Assembly:

“The Union expresses the wish that the Government of the U.S.S.R. organize as soon as possible a fully equipped expedition to explore the region in Siberia of the great fall of June 30, 1908.”

Dr Harlow Shapley explained the plan of meteoric research taken up at the Harvard College Observatory, and introduced Prof. Öpik, who gave a comprehensive account of the methods devised and used in the Arizona expedition, and of the preliminary results derived from the 20,000 meteors observed during the first year of this campaign.

The President described the attempts made to locate the great Arizona meteor, or meteors, and the results to be expected from the exploration of large meteoric masses.

Commission 23. (CARTE DU CIEL.)

PRESIDENT: M. Esclangon.

SECRETARY: M. K. Hujer.

M. le Président rend hommage à ceux de ses membres que la Commission a perdus depuis sa précédente réunion: son éminent Président Turner, le P. Hagen et M. Cosserat.

Il rend succinctement compte de l'état des travaux du Catalogue et de la Carte, et fait ressortir les notables progrès effectués depuis le dernier Rapport.