MARTHA BETZ SHAPLEY

(1890–1981)

as she will be remembered by more than one generation of astronomers as first lady of the Harvard College Observatory between 1921 and 1952.

IN MEMORIAM

MARTHA BETZ SHAPLEY

(1890–1981)

In October 1972 (cf., *Astrophys. Space Sci.* **18**, 258–265) we took farewell in this place of Dr Harlow Shapley, Director Emeritus of Harvard College Observatory in the United States, and one of the most eminent astronomers of the first half of this century. Eight years later, it becomes our sad duty to say farewell to his widow and fellow-astronomer who departed from this world to join her husband and her ancestors at the beginning of this year. It is indeed impossible to separate the husband and wife in the minds of astronomers – and there are legions of such survivors still around today – who had the privilege to know them; and the undersigned (as one of them) would like to place this little bunch of flowers on the recent tomb of the partner who departed from this world on January 24, 1981, at an age of more than four score and ten years.

Martha Betz – the future wife of Harlow Shapley – was born on 3 August, 1890, in Kansas City, Missouri, U.S.A., of German parentage. The family emigrated to the United States by the middle of the 19th century from Hannover; and (as Mrs Shapley once told me), when her grandfather was a young boy there, he saw Caroline Herschel (who in 1781 was at her famous brother's side at the discovery of Uranus, later discovered not less than eight comets – including Encke's! – in her own right, and lived till the ripe old age of 98) more than once being driven in a coach through the streets of that city; and the grandfather Betz remembered the old lady well enough to describe her to his granddaughter half a century later.

But astronomy did not become at home in the Betz family from that time. Carl Betz, father of the future Mrs Shapley, was an educator in Kansas City and director of music in the City schools. Music was a part of the future Mrs Shapley's childhood; and remained her favourite avocation throughout her lifetime. The present writer will never forget her exquisite rendering of Chopin's *Ballades* at the piano of the Harvard Observatory Residence (when she thought that nobody was listening).

In due course, Martha Betz graduated with Master's degree from the University of Missouri, which – by a great good chance – happened also to be the Alma Mater of her future husband. Years later, as the latter recorded (cf., H. Shapley, *Through Rugged Ways to the Stars*, Wm. Scribners, New York, 1968; pp. 24–25) ... “There, in my third year, I met a brunette named Martha Betz, from Kansas City, and never got loose – or wanted to. We first met in a mathematics class – she sat in the front row and knew all the answers. She was a clever lady in those days” (added Harlow with a touch of facetiousness which characterized some of his latter-day writing). “She took five full courses and got top marks in them all. Eventually, it became astronomy; and she published quite a few astronomical papers.”

This latter somewhat off-hand remark did not, perhaps, quite do justice to her whom Harlow referred to as a ‘clever lady’. That she was by far the better mathematician of the

two was borne out not only by their school records, but by subsequent careers of them both. What, however, may not be quite so generally known (cf., again *Astrophys. Space Sci.* **18**, 260) is the extent to which Martha Betz – then doing post-graduate work at Bryn Mawr and Harlow Shapley's fiancée – participated in her future husband's Ph.D. thesis at Princeton under the benign eye of Henry Norris Russell. For neither Russell, nor Shapley were born or dedicated mathematicians; and (we suppose) accepted willingly anonymous cooperation of a retiring young lady in what eventually became the famous *Princeton Observatory Contribution* No. 3 (1914), which marked a milestone in the development of the study of eclipsing binary systems.

The month of April 1914 was an important one in the history of the Shapley family. Its head received his doctorate at Princeton; on 15 April married Martha Betz; and before the month was over, the young couple departed for California to join the staff of Mount Wilson Observatory. This was to prove the beginning of a long and auspicious astronomical career which led Harlow Shapley to discover the location of the centre of our Galaxy and, in 1921, to the appointment as director of Harvard College Observatory – a position which he held with great distinction till 1952. But his many activities of ever-increasing scope did not prevent Martha Shapley from the pursuit of a professional career of her own. Inspired by her participation in her husband's thesis at Princeton, she continued their joint work on eclipsing variables after Harlow turned his main attention to the Cepheids in globular clusters; and a sequence of papers, from Martha's pen, devoted to the computation of the elements of different eclipsing systems and variation of their periods (see *Astrophys. J.* **44**, 51–58, 1916; **46**, 56–63, 1917; *Publ. Astron. Soc. Pacific* **30**, 343–346, 1919; *Harvard Obs. Circ.*, No. 238, 1922) followed in rapid succession side by side with papers on Cepheids and related subjects written jointly with her husband (see *Astrophys. J.* **42**, 148–162, 1915; **45**, 182–188, 1917; **50**, 42–49 and 107–140, 1919). Most of these are perhaps only of historical interest today; but viewed by contemporary standards several of these represented outstanding contributions – well above the average in those years.

When, in 1921, Harlow Shapley was called upon to accept the directorship of Harvard Observatory and moved East to Cambridge, Mrs Shapley continued for a time her independent work in the field of eclipsing variables – as witnessed by her papers published in *Harvard Bulletins* No. 797 (1924) or 843, 844, and 845 in 1927 – but their number was gradually subsiding for several reasons. In 1921 the Shapleys returned from California to Cambridge with a family of three children – Willis, Alan, and daughter Mildred, who all made a name for themselves in the world of science in due course – while in subsequent years the family was augmented by two proper Bostonians – Lloyd and Carl – who by their talents did not stay behind their Californian brethren.

The cares of a growing family exacted much of Mrs Shapley's time; but it was not only the children who claimed their mother's attention. In a very true sense, on coming to Harvard the Shapleys adopted a much wider family of budding astronomers – residents as well as of birds of passage – who will remember them with affection all their lives. For at Harvard Mrs Shapley's career as a warm and gracious hostess blossomed out to the full – entertaining with equal grace the rich and the poor, famous and humble (some-

times, as with Albert Einstein or Igor Stravinski, both in one person) the geni and amateurs, or scared undergraduates. The Shapleys loved to entertain. On each Friday nearest the full-moon – when astronomical photography (and most astronomical work in those days was photographic) was curtailed by bright moonlight, Dr Shapley was the host to a Full-Moon Club at his home, for graduate students as well as staff. In fact, almost any occasion provided an excuse for a party.

The highlight of the season used always to be the Christmas Party at the Residence, at which praises to the Heavens were raised by carols sung by many astronomers of all ages. One particular number (which sticks vividly in my memory) were the solo parts of ‘We Three Kings’ – the role of Melichar being sung by the good Christian Bart J. Bok (I can no longer recall who sang Caspar), and that of Balthazar by Henry Norris Russell – a guest performance which would have penetrated the Gates of Heaven even more readily if that distinguished astronomer could better carry the tune! Miss Sibyl Chubb used to act as honorary conductor of most such performances; with Dr Shapley as a genial master of ceremonies, seeing to it that the festive spirit prevailed at all times; though it was his wife who – inconspicuously, but with unfailing charm – made everyone feel truly a member of the same family.

In the meantime, years went by leaving no one unmarked; the Shapley children left the paternal roof one by one to start families of their own. Then ‘the tides in the affairs of men’ brought about another Great War, after which nothing was ever the same. This is, perhaps, not the place to tell how well Mrs Shapley served her country during those trying years. When, however, the 1939–1945 war came to its end, she caught her ‘second wind’ and returned to the science of her youth to make the major contribution of her lifetime: namely, as co-author of the *Catalogue of the Elements of Eclipsing Binary Systems* (Manchester, 1956), which in more than one sense can be regarded as a descendant of Harlow Shapley’s *Princeton Contribution* No. 3 forty-two years later.

The work on the new catalogue, based on systematic re-discussion of observational data on eclipsing variables, accumulated in the first half of this century, by more modern methods developed by Piotrowski and the present writer at Harvard in the 1940’s, commenced in 1948 under the auspices of the American Philosophical Society of Philadelphia; and it was only the departure of its junior author from Cambridge to Manchester in 1951 that delayed the completion and publication of this work till 1956. And, we may add, the 1956 Catalogue carried the name of Martha Betz Shapley on its title page as co-author.

The preparation of this Catalogue (which, although now out of date as regards the material included, remains still unsurpassed in method of presentation) was the last major contribution of Martha Shapley to the subject to which she remained faithful for more than forty years. After the retirement of her husband from the directorship of Harvard Observatory in 1952 she had still almost thirty years of quiet life ahead of her – first with her husband (who left her in 1972), and then with her children and grandchildren, all of whom have continued, and are continuing, to uphold the distinguished family tradition.

The last years of Mrs Shapley’s life were spent in Tucson, Arizona, with her daughter

Mildred Shapley Matthews – an astronomer in her own right (who by now may have edited more books than her father ever wrote) watching the third generation of the Shapleys grow to maturity. Death came gently to Martha Shapley on January 24 of this year in her sleep to take her soul among the stars – and left us behind full of memories of days gone by, never to be forgotten by anyone who had an opportunity to know Mrs Shapley during her lifetime.

Ave anima pia.

ZDENĚK KOPAL