

and Brian was smiling a very big smile, seeing our embarrassment. During the meeting I had several opportunities to discuss with him several topics and was impressed by his uncomplicated kindness.

His sense of humor also appeared every now and then in his e-mails. When I suggested to him, together with Rainer Kracht, discoverer of a third comet group in SOHO data, to name a minor planet after Heinrich Kreutz, he agreed and said that this is the way how “we three small ‘groupies’ honor the memory of the master!”.

In the course of the following years, I was quite successful in pre(dis)covery work, as well as with identifications of long-lost comets. Brian always gave credit to me, even in cases when I was not able to demonstrate the identity based on all data available. Moreover, he responded very often by encouraging me to go on, and saying that it was good work. Brian also accepted new different orbital solutions if one was able to demonstrate that the found solution was more reasonable. I can't think of anything better to motivate amateur work.

So in the end, Brian was a constant and important factor in my amateur astronomical career. Without him and his support, I would surely not have achieved what I have. He influenced my work to a large amount, and one of my proudest moments was when I accompanied Brian at a panel discussion at the IWCA III in 2004 in Paris, sitting next to him.

What will be next? Who will fill in his shoes? Who will continue this extraordinary work on cometary orbits? Additionally, we have lost someone who was a walking encyclopedia of the history of astronomy and could always provide valuable information that was especially important for the *Cometography* series. I would never have thought that the death of a man that I have met only three times and with whom I communicated mainly via e-mail would touch me so deeply — but it says much about the importance and magnitude about this man and his impact on others.

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SOME OF MY PROFESSIONAL AND PERSONAL REMEMBRANCES OF BRIAN G. MARSDEN

by Zdenek Sekanina (*Jet Propulsion Laboratory, California Institute of Technology*)

I was in communication with Brian for some 45 years. To the best of my recollection, my first contact with him dates back to late 1965 or early 1966. At the time I got interested in the dynamical effects of anisotropic outgassing from comets on their orbital motion, usually referred to as the nongravitational effects. In July 1965, I attended the 13th International Astrophysical Colloquium, held at the Institut d'Astrophysique of the University of Liège, Belgium, where I met Dr. Fred L. Whipple, then Director of the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts. Even though his icy-conglomerate model for cometary nuclei (more informally known as “dirty snowball”) had by the mid-1960s already gained much recognition and popularity, he was aware of the need for fully convincing dynamical foothold in order that his interpretation of the secular acceleration in the motion of comet 2P/Encke (and similar effects in the motions of other comets) become foolproof and unassailable. Whipple told me that the issue should conclusively be settled by attacking the problem with the use of modern, rigorous orbital methods and powerful electronic computers, and that he was about to bring in to the Observatory a bright young guy, whose name was Brian Marsden, to do just that.

Brian achieved his first major success even before coming to the Smithsonian. In the December 1963 issue of the *Astronomical Journal*, he presented the results of his orbital study (at Yale) of seven long-lost periodic comets, which besides the three objects that probably disintegrated and were no more — 3D/Biela, 5D/Brorsen, and 25D/Neujmin — also included 11P/Tempel-Swift, 17P/Holmes, 54P/de Vico-Swift, and, yes, the target of the *Deep Impact Mission* in 2005, 9P/Tempel. Applying an early version of his orbit-determination method — probably the earliest ever, fully automated computer code written for this task, Brian integrated the perturbed motions of these objects over a large number of revolutions during which they were missed, predicted their osculating orbital elements for the mid-1960s to early 1970s, and provided search ephemerides. On the basis of these computations (and those by J. Schubart for 54P and G. Schrutka von Rechtenstamm and Schubart for 9P), 17P was discovered in July 1964, 54P in late June 1965 (later lost again and rediscovered as a new comet in October 2002 by the NEAT project), and 9P tentatively in June 1967 and positively in January 1972. Only 11P remained lost until rediscovered as a new comet by the LINEAR project in December 2001.

I began to exchange letters with Brian, and in one of them he said that he would attend the 13th General Assembly of the International Astronomical Union to be held in Prague in late August 1967. That is how we met for the first time in person. One evening my wife and I invited him for a drink to our apartment, where with no hesitation he agreed to read a long passage from the most famous Czech book *The Fateful Adventures of the Good Soldier Schwejk in the World War* by Jaroslav Hašek — in Czech! My wife and I soon broke down with laughter, but Brian continued to read with his impeccable British accent, polite demeanor, and gentlemanly smile. It was hilarious.

In 1968 I was again invited to work at the Institut d'Astrophysique in Liège, where Brian visited us during one of his European science-packed trips and where we learnt about the Soviet invasion of Czechoslovakia. After we decided to stay in the West, I felt most fortunate to secure a position at the Smithsonian Astrophysical Observatory and became Brian's co-worker. Up close, I could truly appreciate the monumental amount of work that he was involved with in his effort to fully understand the role of the outgassing-driven nongravitational forces in the motions of comets. Brian and I began to closely collaborate, and I guess the three highlights of our joint effort were (i) the formulation, incorporation into the computer code, and widespread application of a new law for the nongravitational effects tied to the sublimation rate of water ice; (ii) the finding that, based on our considerably extended sample of cometary orbits (particularly those with perihelia beyond 3 AU, nearly undisturbed by the nongravitational effects), the peak in the Oort cloud occurs near 50000

AU and is much more pronounced than previously thought; and (iii) the results of our study of the nongravitational motion of comet 2P/Encke over 185 years, since its discovery in 1786 to 1971, which later served as the basis for Whipple's and my investigation of the comet's nuclear precession.

My friendship with Brian soon included our families as well, and it lasted not only during my stay at the Smithsonian Observatory, but continued even after we moved to the West coast in 1980. We visited each other from time to time, and because Brian was a connoisseur of fine wines — red in particular — especially in more recent years he and his wife Nancy loved to come to California (where their son Jonathan also settled down with his family) to tour with us the wine country and have a lot of fun with tasting.

Finally, a relatively recent example of Brian's famous memory. In a desperate search for the lost comet 17P/Holmes in 1919, W. Baade at the Hamburg Observatory found an object close to an (incorrect) ephemeris and R. Schorr, the Observatory's Director, reported it as a possible recovery. The object was even assigned an official IAU designation — comet 1919f! Several days later the false alarm was called off. Late in 2007, nearly ninety years later, while researching the history of comet 17P, I followed this story in the literature, but did not find out what Baade's object actually was. When, some time later, I got on the line with Brian, I mentioned to him this comet's foiled "recovery" and, out of curiosity, I asked whether by any chance he ever came across this issue. Brian's prompt answer was "Oh, yes, I remember it; I looked into that in the 1970s and identified the object with the minor planet (137) *Meliboea*". I could not resist and make a brief record of this in the literature while Brian was still with us (see Sekanina 2009, *ICQ* 31, 46).

I very badly miss Brian, who was not only a very prominent astronomer but also one of my dearest and closest friends.

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BRIAN MARSDEN AND THE CSBN

by Pam Kilmartin (Mount John University Observatory, Lake Tekapo, New Zealand)

The transfer of the Minor Planet Center (MPC) from the Cincinnati Observatory to the Smithsonian Astrophysical Observatory in Cambridge, MA, on the retirement of its director Dr. Paul Herget on 1978 June 30, marked the beginning of many gradual changes in the recording of observations of both minor planets and comets, and in the temporary and permanent designations of these smaller denizens of our solar system.

In all these gradual changes the guiding force belonged to Brian Marsden, not without a certain amount of gravitational and non-gravitational perturbation from other interested parties.

The names of minor planets had been traditionally suggested by their discoverers, since the early excitement of new planets to name subsided as the number grew from tens to hundreds. Comets, of course, are named after their discoverers. Under the direction of Dr. Herget, the naming of minor planets had become more liberal over the years, and the names chosen were not limited to feminine given names, or feminized surnames. Brian always continued to support this liberal attitude, even as the discoverers' numbers multiplied and their imaginations burgeoned.

Committees came to minor-planet naming in 1979, when a resolution of IAU Commission 20 affirmed the tradition that a discoverer of a numbered minor planet be permitted to propose a name for it, consistent with the broad policy of the Working Group on Planetary System Nomenclature. (The narrow policy of the WGPSN about persons having to be dead before their names were used was ignored.) If the discoverer were dead, or the minor planet went unnamed for 10 years, others could propose names, and a committee of three would judge the selection. By 1982, all names proposed had to be reviewed for suitability, and names limited to 16 characters, as the needs of computer programming prevailed. The review committee was composed of the President and Vice-President of Commission 20, and the Director of the MPC. The same year saw the formation of the Comet Nomenclature Committee.

Discoverers regarded their naming as a right rather than a privilege, and it was soon necessary to incorporate some rules, later renamed guidelines, to assist the review committee. As well, procedures for protest about rejected names had to be drawn up, and Brian presided over some lively discussions in Commission 20 in 1985 and 1988.

In 1991, at the same time as the Commission recommended the amalgamation of its four committees dealing with solar system names, the Minor Planet Names Committee (MPNC) wangled itself an expansion to seven members. Possibly this helped when in 1994 the CNC and the MPNC were indeed amalgamated, to become the Small Body Nomenclature Committee (SBNC), but managed to remain mostly independent of the WGPSN. Confusingly, an *ad hoc* Comet Names Committee stayed in operation until the re-jigging of comet designations was finally completed in 2003.

SBNC began its career with nine members, and occasionally referred to itself as the Small Bodies Names Committee. In August 1995, Brian asked me to fill a vacancy that had occurred. "The duties are not arduous", he wrote. "We try to make decisions more by consensus than by vote, although if even one of the nine members violently objects to a proposal, that proposal would be withheld".

There were occasions, when the numbers of names to be considered became onerous, that the committee tried various other means of resolving, including by vote or by division of labour. But eventually the established patterns would return, and we did indeed decide by consensus in most cases. Only the really contentious cases came down to a vote. And there were still lively discussions over rejected names at each Commission 20 meeting.

In 1997, the committee acquired both terms of reference, a new chairman, and yet another new name, becoming the Committee for Small Bodies Nomenclature (CSBN), but Brian continued to act as secretary and consensus remained the