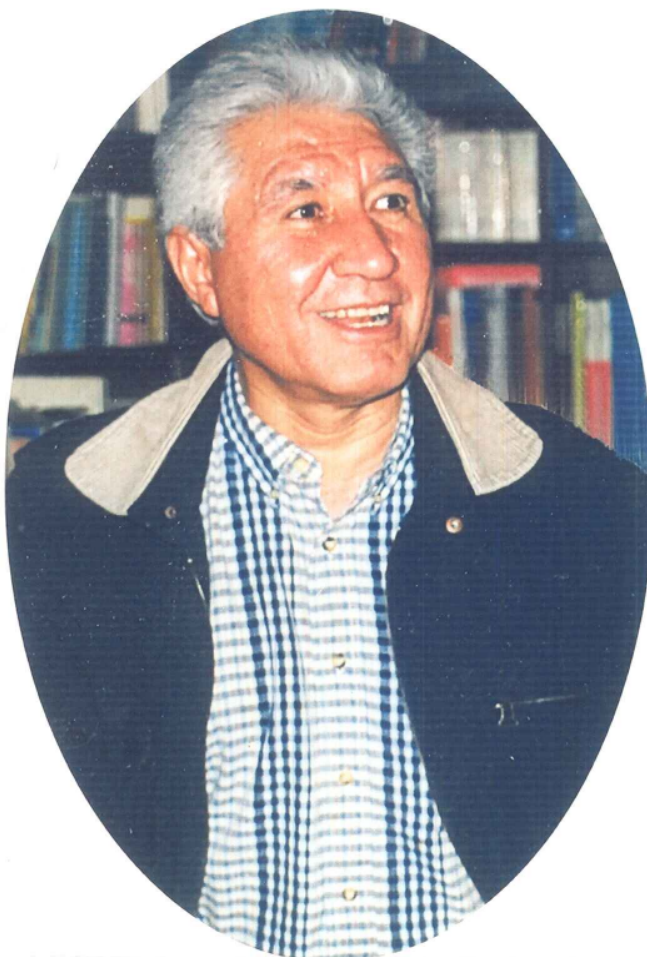


## OBITUARY



**Octavio Cardona**  
**1943–2014**

Octavio Cardona Nuñez, born in the Mexican city of Zacatecas on November 25, 1943, showed an inclination for sciences at an early age. He moved to Mexico City to study physics at the Universidad Nacional Autónoma de México (UNAM) in the 1960s, a time when students were increasingly politically active. The violent repression of the student movement at Tlatelolco on October 2, 1968, and the subsequent hardening of policies by the Mexican government, imprinted a mark on the generation of Octavio. At those eventful times he entered the newly formed Instituto de Astronomía of UNAM as a student and teaching assistant, having the fortune of participating in the coverage of the 1970 solar eclipse. He obtained his bachelor degree in the following year and received one of the first CONACYT grants to pursue postgraduate studies abroad. He did a PhD at the University of Colorado, in Boulder, under the guidance of Dimitri Mihalas, with a theoretical analysis of  $C^{++}$  lines in O stars using coupled statistical and transfer equation solutions. His solid background in physics allowed him to do research on radiation transfer throughout his life.

Octavio Cardona, sometimes referred by the nickname of “Zacatecas” by his close friends, returned to Mexico in 1978 to become the first astronomer hired by the young Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE). Back in November 1971, Guillermo Haro converted the Observatorio Astrofísico Nacional of Tonantzintla into INAOE, an institution conceived with astrophysical research as the driving motive for developing instrumentation and research in the applied areas of optics and electronics. INAOE’s first project was a new observatory to be located in the northern state of Sonora, in the vicinity of the town of Cananea. Incarnating the concepts of Guillermo Haro, Octavio combined his research in astronomy with work in optics and instrumentation. At the

same time that he was an important assistant to Haro in the building of the Cananea observatory, he managed to collaborate with his colleagues in the optics department, publishing over twenty papers related to optical surfaces, the Ronchi and Hartmann tests and interferograms in co-authorship with his close friend, Alejandro Cornejo.

In 1981 he visited the Kitt Peak National Observatory in Tucson, just a three-hour drive north of the border from Cananea. He stayed for six months in order to build skills as an observer; as a result of this stay and subsequent observing runs at Kitt Peak, Octavio established a collaboration and friendship, with Helmut Abt which resulted in four well-noticed papers about peculiar and binary stars. He returned to Tonantzintla to become a companion of Guillermo Haro during his last years there. Octavio was practically the only astronomer at INAOE when Jorge Ojeda became director of the institute in 1984, a year marking difficult times for Mexico and its science. The establishment of the Cananea observatory progressed slowly under harsh financial circumstances, but it was finally dedicated and named Observatorio Astrofísico Guillermo Haro in September 1987. Octavio was to co-direct the Ph.D. thesis of Raul Mújica, containing a search of Bl Lac objects among *ROSAT* X-ray sources derived from the first observational program undertaken at Cananea. Octavio would end up supervising six Ph.D. and six M.Sc. theses.

In 1992, when Alfonso Serrano took over the directorship of INAOE, Octavio became head of the Astrophysics Department for three years. Always institutional, he supported the phase of institutional growth that came with Serrano and became involved in the early work of the Large Millimeter Telescope (now named after Alfonso Serrano). From 1999 onwards he became a frequent visitor of the Institut d'Astrophysique de Paris and the Instituto Astrofísico de Canarias, where he collaborated with his friends Edouard Simonneau and Lucio Crivellari, with whom he published particular solutions of the radiation transfer equations based on the implicit integral method.

I met Octavio during my own incorporation to INAOE in October 1993. More than a department head, he was a warm host providing valuable guidance to those starting a career at Tonantzintla. His persistent smile did not prevent him from occasionally showing a strong temper - usually in adamant defense of his views. Still, he believed in letting people work freely and was respectful of divergent opinions. Octavio embodied the concept under which INAOE was established. With his strong personality, he remained faithful both to his own academic research and to the institute which he served for over 35 years, in good and in bad times. Octavio lived through practically all the history of INAOE, the modern Tonantzintla, from the times of Haro to the present. Octavio, one of the last links with the roots of INAOE, remains in fond memory of those who had the fortune to meet him.

Alberto Carramiñana