

**Francis Marion University**  
**Department of Physics & Astronomy**  
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This report covers the interval 1978 until 2000.

## 1. HISTORY OF ASTRONOMY AT FRANCIS MARION UNIVERSITY

Francis Marion University (FMU) was founded in 1970. It was named for Revolutionary War hero, General Francis Marion, who was nicknamed the “Swamp Fox” for using the South Carolina terrain to out-fox the British. It is now one of South Carolina’s 12 state-supported universities, currently enrolling approximately 4,000 students, primarily from South Carolina, but also from 32 states and 33 foreign countries.

Astronomy began at FMU in 1978 with the construction of a planetarium, and has been coordinated by Professor Ed Dooley until his death in April 2000. During his 22 years of service, Ed Dooley provided planetarium shows at FMU for approximately 180,000 visitors. The planetarium was renamed this year in his honor as the Dooley Planetarium. An observatory was built at Francis Marion University in 1982 which was also directed by Dooley. These facilities are described below.

John Mattox was hired in September of 2000 to direct the Astronomy Program at FMU. The department name is being changed from Chemistry & Physics, to Physics & Astronomy. Prior to assuming this position, Mattox was an associate research professor in the Department of Astronomy at Boston University. He obtained a PhD in Applied Physics from Stanford University in 1987, working with Robert Hofstadter on the construction and calibration of the EGRET Gamma-Ray Telescope. Prior to holding the Boston University position, Mattox held post-doctorate positions working with EGRET groups at the Max-Planck-Institut fuer extraterrestrische Physik in Germany, and at NASA/GSFC.

## 2. FACILITIES

### 2.1 The Dooley Planetarium

The Dooley Planetarium is located on the second floor of the Cauthen Educational Media Center on the FMU campus. The planetarium features a Spitz System 512 projector under a 33 foot dome and it seats 73 people. Programs for the general public are offered on the second and fourth Sundays of each month. The planetarium also offers free programs for regional school groups on weekday mornings, which are booked by calling the departmental secretary at (843)661-1381. More information is available at <http://astro.fmarion.edu/planet/>.

The co-location of the planetarium and the university media center facilitated a collaboration between the media cen-

ter director, Ross Fleming, and Ed Dooley to produce a weekly 2 minute television segment on astronomy called “Sky Watch,” which was broadcast by Florence television station WBTW from 1978 until 1988. It was also carried by South Carolina Educational Television Station WRJA and a Nebraska Cable system.

### 2.2 Francis Marion University Observatory

The Observatory at Francis Marion University is located at longitude 79.646 degrees west, latitude 34.178 degrees north. The elevation is 150 feet. A two-story concrete structure is topped with a 12.5’ diameter Ash dome. It is located at a fairly dark site at the south end of campus. In 1986, several thousand local residents visited the observatory in pre-twilight morning hours to view Halley’s Comet.

The dome currently houses a 14-inch Celestron telescope. Three 8-inch Celestron telescopes are also currently used for instruction and public viewing on the outside deck of the second floor. A CCD camera will soon be acquired. Some outdoor lighting fixtures are being retrofitted to reduce glare at the observatory. More information is available at <http://astro.fmarion.edu/observe/>.

## 3. RESEARCH ACTIVITIES

- **Faculty:** John Mattox was appointed in September of 2000 as a tenure-track associate professor of astronomy and physics.

Mattox studies the blazar class of Active Galactic Nuclei. Through the study of the correlation of variability between different emission bands, it is expected that we will eventually understand the emission mechanism(s) of blazar jets. This is expected to facilitate the utilization the continuum emission of these jets as a probe to understand how the relativistic jets of blazars are created. Thus we have the opportunity to study the behavior of matter in the extreme environment created by a  $\sim 10^9 M_{\odot}$  black hole.

Mattox is an associate investigator for the pending GLAST  $\gamma$ -ray mission (see [www-glast.stanford.edu](http://www-glast.stanford.edu)). To facilitate extensive optical observations of blazars during the GLAST mission, Mattox is developing plans for a global network of automatic optical telescopes. (see <http://astro.fmarion.edu/atn/>).

## PUBLICATIONS

The following publications have been accepted during the time Mattox has been at FMU.

Mattox, J.R., *et al.*, 2000, “A Gamma-Ray Flare of Quasar CTA 26,” *Ap J*, in press.

John R. Mattox