

UCLA Department of Physics & Astronomy

COLLOQUIUM

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A short history of basic plasma physics devices at UCLA and some of the experiments performed with them

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Over the past 40 years a series of innovative plasma sources and diagnostics were developed at UCLA. Each was designed to attack problems in plasma physics that could not be done on contemporary existing machines. The UCLA plasma physics group had, thanks to good fortune, talent, and the foresight of those who put it together, what it took to be at the forefront of basic plasma physics. This talk will discuss a series of machines constructed to study waves and instabilities in magnetized plasmas, magnetic field line reconnection, Alfvén waves and space plasmas and laser plasma interactions. The experimental constraints which dictated the design of the devices (the politics is a matter best discussed over wine and cheese) and the results of several of the experiments will be discussed. Unfortunately, some important machines also developed at UCLA such as those used in Tokamak fusion research, low temperature industrial plasmas and others will not be covered because of the time constraint. Instead I will outline what my colleagues and I were directly involved in over the years.