



Phys 780: Solar Flares and CMEs – Their Physics and Observations

Credits/Time: 3 credits, M/W 2:00–3:30 pm

Instructor: Prof. Bin Chen (Email: bin.chen@njit.edu.)

Office: Tiernan 101)

Course Webpage: <https://web.njit.edu/~binchen/phys780/>



Description: This offering is a newly designed graduate-level course in the George Ellery Hale Collaborative Graduate Education (COLLAGE) Program, a series of web-cast courses delivered from US universities with graduate programs in Solar and/or Solar-Terrestrial Physics: University of Colorado, New Jersey Institute of Technology, University of Hawaii, New Mexico State University, and Montana State University.

The course concerns solar flares and coronal mass ejections, large explosions on the Sun that drive the “weather” in our space environment. It will cover the basic physical principles involved in flares and CMEs, including gas dynamics, magnetohydrodynamics, kinetic theory, and radiation processes. It will also cover the methods used to observe and study flares, including visible and UV spectroscopy, X-ray spectroscopy and radio astronomy. NJIT students will attend from Tiernan Hall 101 which is equipped with a large-screen monitor, microphone, and web camera. Lectures will be given by Profs. Dana Longcope (MSU), Bin Chen (NJIT), Jiong Qiu (MSU), and Adam Kowalski (CU & NSO).