

Postdoctoral position in the Bellan Plasma Group (posted Dec 9, 2019)

- Recent Ph.D. degree in Experimental Plasma Physics or closely related field
- Preferred experience: X-ray imaging techniques, coded aperture methods, general plasma diagnostics, pulsed power operation, fast data acquisition, measurement of low-level signals in an extremely noisy environment
- Required knowledge: optics, imaging, plasma physics, numerical techniques for data analysis, electronics, vacuum techniques, experiment design
- General: Excellent oral and written communication skills

This position is to participate in construction, deployment, operation, and analysis of a new X-ray imaging diagnostic. A coded aperture imaging system for radiation that cannot be focused using conventional optical methods will be constructed and demonstrated to work with X-rays in the multi-kilovolt range. After testing at Caltech, this system will be fielded on pulsed, intermediate-density fusion experiments elsewhere. The spatial location of the X-ray will be measured. This will be done in association with a graduate student who has already done significant initial work. Prototypes will be tested at Caltech before being used elsewhere.

Publications reporting previous work at Caltech on this are:

Coded aperture: Haw, Magnus A. and Bellan, Paul (2015) *1D fast coded aperture camera*. Review of Scientific Instruments, 86 (4). Art. No. 043506.

X-ray detection: Marshall, R. S. and Flynn, M. J. and Bellan, P. M. (2018) *Hard x-ray bursts observed in association with Rayleigh-Taylor instigated current disruption in a solar-relevant lab experiment*. Physics of Plasmas, 25 (11). Art. No. 112101.

Appointment is for one year with extension to second year if performance satisfactory.

Applicants should submit the following to Professor Paul M. Bellan (pbellan@caltech.edu)

1. *Short paragraph explaining interest in position and giving evidence of suitability*
2. *Resume*
3. *Names of three references*

Detailed information on the Bellan group is at <http://www.bellanplasmagroup.caltech.edu/>