

Pascal Saint-Hilaire

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Dr. Saint-Hilaire joined the Ramaty High Energy Solar Spectroscopic Imager (RHESSI) science and operations team at UC Berkeley's Space Sciences Laboratory in 2005. The bulk of his observational work has concentrated on X-ray data analysis from solar flares, and solar radio observations from low frequencies to microwave, with a few excursions in other fields (sungrazer comets, polarized visible light from flare loops, and extra-galactic radiobursts). Space instrumentation and mission design in radio, X-rays, and gamma-rays are his current focus. He is the PI of the NASA GRIPS (Gamma-Ray Imager/Polarimeter for Solar flares) high altitude balloon payload, and Instrument PI of the Solar Hard X-ray Polarimeter (SHARP) instrument on the PADRE mission.

EDUCATION:

B. Sc.A Electrical Engineering, University of Ottawa, Ottawa, Canada
M.S. Physics, University of Neuchâtel, Neuchâtel, Switzerland
Ph.D. Physics, Swiss Federal Institute of Technology (ETH) Zurich, Switzerland

RESEARCH EXPERIENCE:

Post-doctoral researcher: Space Sciences Lab, UC Berkeley, 2005-2009
Assistant, Associate, then Full Research Physicist: Space Sciences Lab, 2009-present

RESEARCH INTERESTS:

- Particle acceleration and energy release in solar flares; mostly via multi-wavelength observations, data analysis and interpretation of thermal/non-thermal plasmas.
- Solar flaring/non-flaring atmosphere structure and magnetography
- Instrument design & simulation (radio, X-rays), (image) deconvolution techniques.
- Interferometry, Fourier/Fresnel analysis, direct/indirect optics systems
- Numerical simulations and computations, various forward-fitting techniques.
- Astrodynamics: flight dynamics & formation-flying, ephemerides computation

PUBLICATIONS:

Summary: 41 articles in refereed journals, including 15 as first author, and 2 book review chapters. Full list at: <http://sprg.ssl.berkeley.edu/~shilaire/papers/LoP.pdf>
Topics most frequently covered: solar (flare) observations at X-rays and radio wavelengths. Some off-the-beaten-path science firsts on the topics of sungrazer comets, extragalactic radio bursts, and observations of polarized light above the solar limb.

SOME PAST EXTRA-CURRICULAR ACTIVITIES OF NOTE:

Swiss military service, paragliding, various martial arts, spearfishing, diving, hunting.
Now, mostly parenting!