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**UNIVERSITÄT
BERN**

Astronomisches Institut, Sidlerstrasse 5, CH - 3012 Bern

Philosophisch-
naturwissenschaftliche Fakultät

Astronomisches Institut

Bern, November 15, 2011

The

Group for Optical Astronomy of the Astronomical Institute, University of Bern

is inviting applications for a

PhD position

in the field of celestial mechanics/fundamental astronomy

The Optical Astronomy group of the Astronomical Institute of the University of Bern (AIUB) has a world-leading position in the domain of optical surveys and characterization of fast moving objects, including artificial satellites, space debris, and asteroids. AIUB operates the Zimmerwald observatory equipped with a 1-m multi-purpose astronomical telescope (ZIMLAT) used for satellite laser ranging, as well as for astrometric and photometric (CCD) observations of natural and artificial bodies. For survey purposes ZIMLAT is complemented by a small-aperture robotic telescope ZimSMART. With its research focus on space debris, space surveillance, and space situational awareness (SSA), the group is deeply involved in various ESA-funded studies and performs space debris surveys with the ESA 1-m telescope at Tenerife on behalf of ESA. The successful candidate shall develop refined algorithms to determine and propagate orbits of space debris, in particular orbits of debris with high area-to-mass ratios, based on the available expertise and tools developed at the AIUB. The procedures should also be extended to handle new observables, including range and range-rate observations from radar or telemetry measurements. For objects in highly eccentric orbits this will allow combining radar observations taken at the perigee with optical observations from the apogee. In a second part, the algorithms shall be adapted to determine and propagate orbits of heliocentric objects, including NEOs.

Requirements: University degree (master or equivalent) in astronomy, geodesy, physics, mathematics or a similar discipline. Fluent English; basics in German are an advantage.

Appointment: Open until filled.

Application: Until December 17, 2011.

Salary: Based on the regulations of the Swiss National Science Foundation

Contact: Head of the Optical Astronomy Group, Prof. Dr. Thomas Schildknecht (Tel. 031 631 85 94, email thomas.schildknecht@aiub.unibe.ch, Office 210a).

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