

## Deep Space LIVE

### Upper Austria in the Light on an Invisible Laser

(Linz, November 22, 2010) A systematic aerial laser scan of Upper Austria has been performed over the past few years. What it brought to light were earthen ramparts and trenches, mound graves (tumuli) and roads dating back to epochs long past, beds of long-since-dried-up streams, bomb craters from World War II, and thus many different forms and structures that have been impossible to capture and visualize until now. Kurt Pflieger, the Province of Upper Austria's DORIS coordinator, and Erwin Kraus, head of remote sensing and engineering geodetics for the Province of Upper Austria, will moderate the next Deep Space LIVE, which will present new and surprising insights into this region's topography and the historical events linked to it. The featured attractions are digital terrain & surface models.

#### Laser Scanning

Laser scanning is a new technology that can be used to create topographical models. The process entails sending out fan-shaped light impulses from an airplane or helicopter. The scan registers the impulses' direction as well as the resulting echo reflected from the Earth's surface and every object upon it. When the light impulses encounter very tiny or linear objects such as leaves, twigs or high-tension lines, only a small portion of them are reflected back; most of the light impulses move on and are reflected by the surface of the Earth. Thus, what the scan registers are always the first and last echoes produced. Algorithms make it possible to analyze laser points produced by the last echo and to determine whether or not they were produced by the Earth's surface. Those that were go into the computation of the so-called digital terrain model (DTM); all laser points are used to generate the digital surface model (DSM).

#### Kurt Pflieger

Kurt Pflieger (born 1961) studied surveying at the Vienna University of Technology. He worked as a surveyor and in the IT sector before joining the government of the Province of Upper Austria in 1991. He set up the DORIS geographic information system and has been the DORIS coordinator since 2005.

#### Erwin Kraus

Erwin Kraus (born 1959) studied surveying at the University of Innsbruck and at Vienna University of Technology. After graduation, he spent 10 years doing photogrammetry in the private sector. Erwin Kraus has been with the government of the Province of Upper Austria since 2000, and has been in charge of remote sensing and engineering geodetics since 2005.

#### Deep Space LIVE

The Ars Electronica Center is now hosting a Deep Space LIVE event every Thursday (except holidays) at 8 PM. Each presentation will feature ultra-high-definition imagery in 16x9-meter format and will be accompanied by expert commentary, entertaining stand-up repartee, and musical improvisation. Whether great works from the history of art, space travel, journeys of discovery in the Nanoworld, or a live concert is what you've come to behold, Deep Space LIVE stands for enlightening entertainment amidst breathtaking worlds of imagery.

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