

Ruhr looks towards new astronomical horizon

Things are looking up for one of the most populated industrial areas in western Europe, thanks to a private initiative known as "Horizon Astronomy in the Ruhr Area".

The collaboration of private individuals, school teachers and members of different German and international institutions has seized this opportunity to plan an Astronomical Theme Park on the biggest slag heap in the Ruhr area, which is currently being restored and reintegrated into the urban environment.

The story of this innovative project will be presented at the RAS National Astronomy Meeting in Leicester on Friday 7 April by Daniel Brown (Liverpool John Moores University).

Mankind has always shown great interest in the paths of the Sun, Moon and stars, trying to understand and predict them. For several thousand years, people have used the horizon as an instrument for these astronomical observations. One of the most prominent structures used for horizon astronomy was Stonehenge in the UK.

"Unfortunately, increasing housing development and light pollution has made it increasingly difficult to see stars and experience the wonders of the night sky," said Daniel Brown. "The observation of the edge of the sky - the horizon - has become increasingly difficult in metropolitan areas such as the Ruhr in North Rhine-Westphalia, Germany.

"However, the *Initia Horae* (Latin: origin of time) group has realised that the redeveloped slag heaps make artificial hills (similar to Silbury Hill in Wiltshire, UK) that overlook all the buildings, enabling a free view of the horizon. This enables us to have an unobstructed view of the horizon once again, and presents ideal conditions to convey ancient observing techniques with and basic astronomical knowledge to a broader public."

One of the group's goals is to design and build a Horizon Observatory on top of the Halde Hoheward slag heap in the north-eastern part of the Ruhr area. Its purpose is to give more people the opportunity to make their own astronomical observations.

The project is part of the Emscherbruch environmental park. The 340 acre park on the slag heap will contain several stations that will be visible from above and appear in the shape of the stellar group known as the Pleiades (commonly called the Seven Sisters).

The most striking installation will be the Horizon Observatory, located at the highest point in the park. The Observatory will consist of two giant arcs, each 95m in diameter, which will be visible from afar, as well as a variety of direction markers.

Seen from the centre, the arcs mark the north-south direction across the sky (the meridian) and the equator, both symbolising fundamental coordinate lines in astronomy. The stars, planets, Moon or Sun will move along paths parallel to the equator, crossing the meridian at their highest position. Direction markers placed at the edge of the observatory define the seasonal shift of the rising and setting points of the Sun.

The second biggest station includes a giant 8.5m high obelisk, part of a giant sundial, which is located on the south-eastern plateau of the slag heap. It has been built following the example of the Emperor Augustus' sundial in Rome.

Lines for every hour and borders between each star sign (constellation of the zodiac) have been marked on

the 60m diameter shadow-casting surface. The true local time and date can be measured to a precision of one minute and one day, respectively. Seven smaller stations display many other hands-on experiments.

The park will also include a Visitors' Centre, built on a former coal mine, which will distribute information, offer guided tours and hold exhibitions on archaeo-astronomy. "Many steps towards completing this fascinating park have already been completed and involved different projects with school classes and trainees," said Daniel Brown.

"When it is finished towards the end of 2007, visitors will be able to experience the rhythm of planetary and stellar objects by making their own observations," he added.

"Embedded in an astronomical science and leisure park, the Horizon Observatory will offer a once-in-a-lifetime opportunity to motivate the general public and develop an astronomical culture.

"The giant sundial has been officially opened for the public and is now a popular visitor attraction visible from the motorway. This is a very positive sign for the future of this and other international projects to inspire interest in basic astronomy for a broader public."

Source: Royal Astronomical Society

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