NASA 'Solar Dynamics Observatory' will be launched on February 10.

On February 10th 2010, NASA will launch a new space mission, the Solar Dynamics Observatory (SDO), to make the most detailed observations of the Sun ever. The mission is designed to help scientists understand the Sun's influence on Earth by studying the solar atmosphere in fine detail in space and time, and in many wavelengths simultaneously.

The Royal Observatory of Belgium (ROB), located in Uccle, will be the only European institute receiving all SDO data directly from the USA, and ROB will serve as a relay to redistribute this data further in Europe.

“SDO will observe all of the Sun all of the time, and even changes of around 700 km on the Sun will be noticed”, said Véronique Delouille from the Royal Observatory of Belgium. That is equivalent to seeing a 1Euro coin at a 5 km distance.

The Sun's activity varies tremendously during its 11-year cycle. Data from the new probe will enable scientists to understand changes in the Sun's magnetic field, which emits sporadic storms of charged particles that can disrupt technology on Earth and threaten humans in space.

Despite the Earth's relative closeness to the Sun it is only recently, with the advent of space missions, that the Sun can be observed without detail being blocked by the Earth's protective atmosphere. “The atmosphere of the Sun is much hotter than its surface, and SDO will help understand how this heating works” says Jean-François Hochedez from the Royal Observatory of Belgium.

The Solar Dynamics Observatory carries three outstanding instruments. One of them will take - every 10 seconds - very high quality snapshots of the Sun, in eight wavelengths of ultraviolet light. This will generate 1 to 2 Terabytes (200 DVDs!) of data per day…

After it reaches its orbit around the Earth, SDO will undergo various tests, and will likely be able to send back its first scientific data about 60 days after launch. Scientists anticipate that over its five-year mission SDO will revolutionize our understanding of the Sun.

Further reading:

Main SDO website (shows countdown to launch):
http://sdo.gsfc.nasa.gov/

SDO Media Resources (with Press quality Photos)
http://sdo.gsfc.nasa.gov/resources/press.php

SDO center at the Royal Observatory of Belgium:
http://wissdom.oma.be

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