The Spanish Network for Light Pollution Studies: Interdisciplinary science of the dark side of light

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Light pollution is the detrimental alteration of the natural levels of darkness due to artificial lights. It has aroused in recent years a growing interest among the scientific community. Besides the widely known consequences of the increased skyglow for science, in particular for optical astronomy, the misuse of artificial light at night has been shown to have measurable and unwanted effects on global energy consumption, ecosystem dynamics, human and animal health and on the preservation of key aspects of mankind’s cultural immaterial heritage.

The rapid pace of development of new lighting technologies based in solid-state devices opens interesting possibilities for light pollution reduction and control, but at the same time poses a non-negligible risk of increasing some of its most negative effects.

Addressing this complex issue, which involves light generation, steering and detection, atmospheric propagation and scattering, visual and physiological optics, photochemistry, biological effects of light, public health, and energy, including economy and global change aspects, requires a multidisciplinary cooperation of researchers specialized in each of these fields.

The Spanish Network for Light Pollution Studies (REECL, Red Española de Estudios sobre la Contaminación Lumínica) is a step forward in this direction, providing a meeting point for the exchange of experiences and the development of joint research actions between its member groups.

The Network is presently formed by twelve groups belonging to the areas of Astronomy, Biology, Ecology, Chemistry, Health Sciences, Lighting Engineering, and Optics.

The main tasks of this Network are:
- Elaborating a catalog of the research groups working on light pollution belonging to any scientific field and developing their activity within the territory of Spain.
- The organization of scientific meetings and technical discussion forums focused on light pollution issues.
- Identifying joint research opportunities and establishing collaborations between the different research groups.
- Elaborating maps of night sky brightness in selected areas, developing measurement standards and protocols.
- Raising public awareness on this issue and promoting science outreach activities.
- Joining efforts with civic dark-sky associations.

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Source: Earth at Night 2012
Suomi NPP / VIRS via NASA Earth Observatory
http://eol.gsfc.nasa.gov/