



Contribution ID: 35

Type: **Poster**

The ESO Diffuse Interstellar Band Large Exploration Survey: First Results.

Monday 11 June 2018 10:48 (1 minute)

The ESO Diffuse Interstellar Band Large Exploration Survey (EDIBLES) is Large Programme that is collecting high-signal-to-noise (S/N) spectra of a large sample of O and B-type stars covering a large spectral range using the UVES spectrograph mounted on the Very Large Telescope (VLT). The goal of the programme is to extract a unique sample of high-quality interstellar spectra from these data that represent different physical and chemical environments, and to characterise these environments in great detail. An important component of interstellar spectra are the diffuse interstellar bands (DIBs), a set of hundreds of unidentified interstellar absorption lines that are commonly found in the spectra of reddened targets. With the detailed line-of-sight information derived from these high-quality spectra, EDIBLES will derive strong constraints on the potential DIB carrier molecules. EDIBLES will thus guide the laboratory experiments necessary to identify these interstellar “mystery molecules”, and will turn the DIBs into powerful diagnostics of their environments in our Milky Way Galaxy and beyond. Here, we will present some of our first results showing the unique capabilities of the EDIBLES programme.

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Authors: Prof. CAMI, Jan (Department of Physics & Astronomy and Centre for Planetary Science and Exploration (CPSX), The University of Western Ontario // SETI Institute); COX, Nick L.J.; FARHANG, Amin; SMOKER, Jonathan; ELYAJOURI, Meriem; LALLEMENT, Rosine; BACALLA, Xavier; BHATT, Neil H.; BRON, Emeric; CORDINER, Martin A.; DE KOTER, Alex; EHRENFREUND, Pascale; EVANS, Christopher J.; FOING, Bernard H.; JAVADI, Atefeh; JOBLIN, Christine; KAPER, Lex; KHOSROSHAH, Habib; LAVERICK, Mike; LE PETIT, Franck; LINNARTZ, Harold; MARSHALL, Charlotte C.M.; MONREAL-IBERO, Ana; MULAS, Giacomo; ROUEFF, Evelyne; ROYER, Pierre; SALAMA, Farid; SARRE, Peter J.; SMITH, Keith T.; SPAANS, Marco; VAN LOON, Jacco Th.

Presenter: Prof. CAMI, Jan (Department of Physics & Astronomy and Centre for Planetary Science and Exploration (CPSX), The University of Western Ontario // SETI Institute)

Session Classification: Poster Presentations

Track Classification: What is dust?