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The NEOShield-2 EU Project

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Abstract

The NEOShield-2 (2015-2017) project has been recently approved by the European Commission in the framework of the Horizon 2020 programme with the aims

- to study specific technologies and instruments to conduct close approach missions to NEOs or to undertake mitigation demonstration, and
- ii) to acquire in-depth information of physical properties of the population of NEOs between 50 and 300 m, in order to design mitigation missions and assess the consequences of an impact on Earth.

1. Introduction

The physical characterization of NEO surfaces is of fundamental importance, especially in view of the potential hazard some NEOs pose to human beings and more in general to life on our planet. Moreover, it allows us to put constraints on the material in the protoplanetary nebula at different solar distances, and can give us insights into the early processes that governed the formation and the evolution of planets, including the delivery of water and organics to Earth.

Unfortunately, our knowledge of the structure and composition of NEOs is still rather limited, since less than 15% of the known NEOs have physical properties determined from observations.

2. Observations and Discussions

In the framework of the EU project NEOShield-2, we will carry out these observations using guaranteed rapid access to Italian telescopes and facilities (e.g. Campo Imperatore, Asiago), as well as by

competitive proposals to get access to medium/large and very large telescopes (e.g. TNG, LBT, and VLT). An operational interface will be maintained together with the ESA NEO Coordination Centre (NEOCC, http://neo.ssa.esa.int) in order to optimize observations devoted to physical characterization

The programme, status and goals, will be presented and discussed.