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THE NEOROCKS "RAPID-RESPONSE EXPERIMENT"

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ABSTRACT

The “NEO Rapid Observation, Characterization and Key Simulations" (NEOROCKS) project has been funded since January 2020 through the H2020 European Commission programme, to improve our knowledge on the characterization of the Near Earth Object (NEO) population. The project connects expertise in performing observations of solar system small bodies and the related modeling needed to derive their dynamical and physical properties, to the pragmatic planetary defense approach. A specific challenge for NEOROCKS is to keep the physical characterization up with the increasing NEO discoveries dominated by small-size objects, yet capable of producing damage in case of impact. Among them are the so-called “imminent impactors” characterized by short warning times before impact.
In Spring 2022 we performed a “Rapid Response Experiment” in order to test and optimize the consortium capability to rapidly implement a NEO “discover-and-characterize” chain, with the coordinated action of astronomers and industrial partners participating in space safety programs. Particular care has been given to reducing as much as possible human intervention by resorting to remote telescope tasking procedures and fast data dissemination techniques. The “rapid response system” eventually set up has greatly profited of the NEOROCKS consortium partners experience in both NEO and Space Debris detection and data processing, while the NEOROCKS telescope network was in charge of closing the loop by performing physical characterization observations in a matter of days. In particular, we obtained light-curve and spectro-photometric data of several targets, using the 3.6-m TNG as well as further smaller facilities. The details and results of such experiment will be presented and discussed.

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Comments:

Oral presentation preferred.

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