

New Zealand's contribution to planetary defense
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ABSTRACT

Aotearoa New Zealand has a long history of follow-up of NEOs, recent support of DART, and a rapidly developing aerospace industry, with a newly developing level of government support extending into the country's first-ever Space Policy from the New Zealand Space Agency this year.

Our professional optical observatory has for nearly fifty years been providing rapid follow-up observations of NEOs discovered by observatories around the world, to assist in improving and securing PHA orbits (PIs: Gilmore and Kilmartin). This facility operated by the University of Canterbury is in the South Island on Ōtehiwai Mt John, Takapō (MPC code 474). In the North Island, Carter Observatory in Wellington (MPC code 485) provided data in 1973-78. The geographical location of New Zealand is a key factor in the relevance of such observations: this observatory is the only meter-class optical facilities between the east coast of Australia, Hawaii and Chile. We assess and report the multi-decade contribution of astrometry from Ōtehiwai Mt John, primarily from its 1 m, to the global repository of NEO tracking astrometry at the IAU Minor Planet Center.

Our 1.8 m provided a multi-week campaign of imaging in support of NASA's DART mission, around DART's impact on Dimorphos in September-October 2022. Due to the 1.8m's MOACam3 imager's 2.2 deg² FOV, we were able to track the temporal development of the extensive tail. We provide updates on the deep stacks obtained in the wide MOA-R filter (Kareta et al. in prep).

The New Zealand Space Agency (established 2016) has just completed the creation and public consultation on the country's first Aerospace Strategy plan and draft Space Policy, in response to the rapidly developing local aerospace industry. Where planetary defense could sit within the domestic government framework and civil defence management is an evolving process, with potential for development of the growing linkages with other space agencies. With the draft Space Policy emphasising values of innovation, responsibility, stewardship and partnership, informed by the concept of kaitiakitanga (a concept from te ao Māori; cf. guardianship) as a guiding framework, there is now real opportunity for New Zealand's broader integration into international planetary defense approaches.

Comments:

As this is my first-ever PDC, I am bringing a general overview of the current state of things in NZ. I don't mind which session it goes with, but hope for one where it will enable opportunities for discussion and a chance to make connections! 😊