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Next generation gravitational wave detector research at the ANU

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Using the optical coating facility at the ANU we will concentrate towards low-loss optical coatings for large scale optics used in gravitational wave detectors. The work is focused on the near-term needs and long-term requirements, either for 1 μm or 2 μm optical wavelengths. Also work on 2 μm optical squeezing generation and its control is underway. A low-frequency gravitational-force sensor is under construction to investigate seismic and atmospheric Newtonian noise sources, while a cryogenic environment is under construction for measuring broadband thermal noise at cryogenic temperatures in silicon flexures.

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