

Abstract Submitted
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The Gravitational Compass: new space-based detection methods for circularly polarized gravitational waves TRISTAN SMITH, Swarthmore College, ROBERT CALDWELL, Dartmouth College — We investigate the sensitivity of space-based gravitational wave observatories based on the platonic solids – tetrahedron, cube and octohedron – to a circular polarization of an isotropic stochastic gravitational wave background (ISGWB) as a function of frequency. For such a detector geometry, each vertex is a drag-free satellite and each edge is a laser interferometer arm. Extrapolating the noise model from LISA to these new geometries, we find that these designs can lead to an increase in sensitivity to an ISGWB.

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