

Abstract Submitted  
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**Alfven's Theory of Sunspots and the Emission of Gravitational Waves from the Center of the Sun** FRIEDWARDT WINTERBERG, University of Nevada Reno — The difficulty in detecting gravitational waves with Ligo detectors raises the question for the existence of other sources of gravitational radiation not accessible by these detectors. Gravitational waves are emitted by the motion of large mass quadrupoles, as they are realized in double stars. Large convective mass motions also take place in the center of the sun, but as long as these motions are spherically symmetric they are prevented by Birkhoff's theorem to emit gravitational waves. This is different in Alfven's theory of sunspots where the sun is a magnetohydrodynamic dynamo, which by a theorem of Cowling cannot possess a spherical symmetric convection. With Eddington's mass quadrupole gravitational wave emission formula and the equations for a magnetohydrodynamic dynamo, an upper limit for the emission rate can be established. This estimate is followed by a proposal to detect these waves using the moon as a large Weber bar focusing the waves by Poisson diffraction into the center of the lunar shadow during a total solar eclipse.

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