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## Luminous Shapes with Unusual Motions as Potential Predictors of Earthquakes: A Historical Summary of the Validity and Application of the Tectonic Strain Theory

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### ABSTRACT

For centuries and on every continent discrete shapes of lights with unusual motions have preceded earthquakes. The numbers of these lights per interval within a region have been strongly correlated with the amount of seismic energy subsequently released within that region. These temporal intervals range between 3 months and 6 months for areas more than 500 km in radius and less than a month for smaller radii. Other analyses have shown that the same tectonic strain associated with earthquakes is also associated with the display of luminous events before those earthquakes. This strain can be precipitated by injections of fluids into the crust, natural changes in hydrological loads on rivers, or, purposeful displacement of water into reservoirs. The strengths of the associations are sufficient to allow modest forecasting of earthquakes within the boundaries of the region and the temporal interval of analysis. More accurate utilization of these phenomena as prognosticators of specific earthquakes will require a re-evaluation of the manner by which these data are systematically recorded and interpreted.

### KEYWORDS

Tectonic Strain; Luminous Phenomena; Earthquake Forecasting; Hydrological Loads

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