

THE RELATIONSHIP BETWEEN
THE LUNAR TIDAL FORCE
AND THE
SOUTHWARD ADVANCE OF CONTINENTAL POLAR AIR

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ABSTRACT

Despite a great amount of folk-lore about the moon and its relationship to weather, there has been little proof of this association supported by scientific study. The purpose of this research is to add to the few existing studies which show some statistical significance in relating the lunar synodic cycle and surface weather events.

G. W. Brier and D. A. Bradley experimented with the various lunar cycles to determine a possible lunar effect on precipitation. Their results show a significant correlation between the lunar synodic cycle and occurrences of maximum precipitation. A further test revealed that only the 29.53 day synodic cycle correlated with the precipitation data. C. A. Mills provided evidence that the 29.53 day period was related to the southward movement of the North American Polar front.

The results of this research indicate higher pressure and lower temperatures during full or new moon than during the quarter phases. The temperature difference between spring tides and neap tides tested to be insignificant; however, the pressure difference proved to be statistically significant.

It is reasonable to assume that the increased tidal force of the moon during full or new phases is related to the increase in air pressure at Des Moines, Iowa, and Bismarck, North Dakota.