



# Testing the Lunar Hypothesis in Vallejo, CA

*Investigating whether service calls can be predicted  
by phase of the moon*

**Agency:** Vallejo (CA) Police Department

**Period:** 2014–2018

**Pracademic\*:** Lieutenant Jason Potts

### Context

Crime rates are known to vary by time of year, but the widespread belief that they vary by phase of the moon has not been substantiated. This study was implemented to determine whether calls for police service differ by lunar phase.

### Key Finding

Analyses of calls for service from 2014 to 2018 do not show a relationship between number of calls and phase of the moon.

\*BetaGov trains agency personnel to become research-savvy "Pracademics" who lead trials.

## Background

Anecdotal reports from community-service organizations suggest that rates of incidents and accidents increase during full moons, known as the "lunar hypothesis." A variety of unwelcome events such as crime and negative behaviors have been attributed to the full moon, although empirical support for these claims is mixed. Aside from curiosity about whether the moon has an effect on human behavior, there could be practical implications. If specific negative behaviors are found to be more common during certain phases of the moon, law enforcement and health organizations can plan accordingly. Because many first responders' belief in the lunar hypothesis is based on their personal experience, the Vallejo (CA) Police Department (VPD) partnered with BetaGov to analyze calls for service and cases as a function of the phase of the moon.

## Study Design

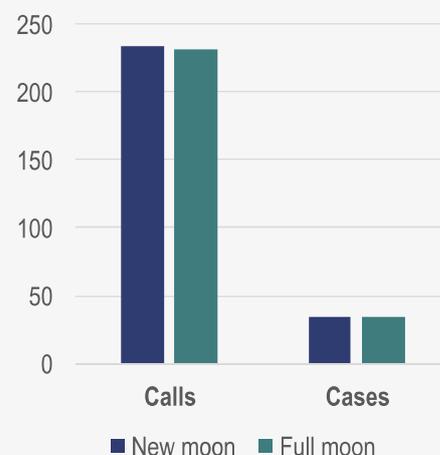
The numbers of service calls and cases received for a "full moon" (day of the full moon plus the day before and after) were compared with a "new moon" (day of the new moon plus the day before and after). The analysis dataset includes about 70,000 calls for service received over a 53-month period from January 2014 through May 2018. Calls for service were defined as all calls to the VPD dispatch center routed for service (including EMS and fire calls) and included an incident number and dispatch of police or fire personnel. Cases are defined as criminal and traffic events that

require documentation. These data were obtained from the VPD Records Management System. Data on lunar phase were obtained from the U.S. Naval Observatory Astronomical Applications Department and merged into the analysis dataset.

## Results

There was no statistically significant difference in the number of calls for service during a full moon compared with a new moon (231 vs. 234 calls), nor was the number of cases different by phase of the moon (34 vs. 34 cases). Analyses that distinguished service calls by severity also found no association with phase of the moon.

**Average Number of Service Calls and Cases: New Moon vs. Full Moon**



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