

# Planets and Stars

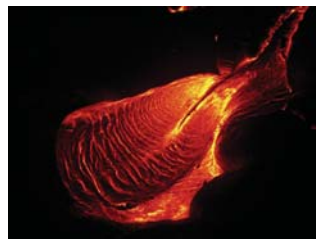
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## Research Theme

Award-winning researchers in Physics & Astronomy are investigating stars and planetary systems to reveal details of their formation, dynamics and evolution. Their research includes observational and theoretical studies of star formation, galactic nuclei, the interstellar medium, radiation transfer, and stellar atmospheres. Western astronomers and planetary scientists have expert knowledge on spectroscopy, time-series analysis, and complex theoretical and numerical modeling of stellar properties and processes. They utilize Western's significant astronomical research facility at Elginfield and the computational resources of SHARCNet.



Planetary scientists at Western study both small and large bodies in planetary systems with an emphasis on our Solar System. Small bodies include meteors, meteorites, comets, asteroids, and moons. Areas of specific interest include their physical and chemical properties, orbits, trajectory analysis, meteor showers, and cartography, all with a view to developing a better understanding of the origin and current state of the Solar System. We have specialists in radio, radar, acoustical, and optical observations, and in the analysis of satellite data. Large bodies include planets and the larger moons. Research areas encompass the properties, dynamics and processes associated with extra-solar planetary systems, planetary interiors, surfaces and atmospheres. To improve our understanding of planetary structure and development, researchers at Western employ various remote-sensing techniques: these include seismology, ground-penetrating radar, and satellite measurements throughout the electromagnetic



spectrum. State-of-the-art facilities across the Faculty of Science, such as the Nanofabrication Laboratory, SSW, other facilities under the WINS umbrella, the High-Pressure / High-Temperature and materials characterization laboratories, are used to analyze planetary materials. Our lasers, balloons and radars probe the composition and dynamics of the atmosphere, while POLARIS, a national seismograph network, explores the interior of the Earth.

The Faculty of Science has created an internationally-renowned research group in planetary and stellar science. Among our outstanding researchers in this area are P.G. Brown, who holds a Tier 2 CRC in Meteor Science, M. Houde, a Tier 2 CRC in Star Formation, and G. Southam, a Tier 2 CRC in Geomicrobiology. A planned Tier 1 CRC in Geophysics will further strengthen research in the planetary sciences. Areas of interest for future developments include planetary dynamics, solar system evolution and expansion of the research effort in astronomy.