

SFP Abstract Guidelines

Formatting Notes

1. Verdana font if available; if not, Times Roman
2. Size 8 font
3. Left justified
4. Title in bold using title case
5. Mentor line in italics.
6. If you have more than one mentor and/or a co-mentor, list the primary faculty/JPL mentor first, followed by secondary mentor and then co-mentors. Also, be sure "Mentor: " becomes "Mentors: ".
7. Do not use Dr. or Prof. on mentor line.
8. Only one space after a period or colon.

Sample Abstract

Martian Polar Wind Patterns: A Study Through Visual Surveys of Aeolian Features and Atmospheric Models

Serina Diniega

Mentor: Mark Richardson

Wind is the dominant active surface-altering process on Mars. Through the redistribution of dust and sand, many Aeolian features are formed which provide important visual clues about the past and present geological and atmospheric processes on Mars. Of specific interest for this project, frost streaks form in the polar regions when the CO₂ icecap defrosts and exposes an underlying layer of dust. The wind picks up and redistributes the dust, creating a mm's-thick dark streak that can extend up to 100s of m. These streaks provide an important and unique basis for examining the surface-level wind systems on Mars, on a regional scale. Through an intensive survey, the location and orientation of aeolian features, such as frost streaks, were identified in images taken by the Mars Orbital Camera (MOC) on the Mars Global Surveyor (MGS). From this data, seasonal maps of the polar circulation patterns were developed. The same regions and seasons were then examined with the aid of MM5, a mesoscale atmospheric circulation modeling program. Comparing the resultant model with the observed aeolian features allows an analysis of the parameters used in the model, as well as a study of the three-dimensional circulation system responsible for the surface winds.