

## Technical Page

Proposal Type: Regular  
 General Category: Planetary Radar  
 Sub-Category: Radar  
 Observation Category: Solar System  
 Total Time Requested: 50 Hours

**Proposal Title:** Surface properties of Venus from radar observations

**ABSTRACT:**

We are proposing new radar observations of Venus in March/April, 2001 aimed at: 1) investigating the relationship between height and the low emissivity/high reflectivity terrains on Maxwell Montes by measuring the topography of Maxwell with considerably better spatial resolution than achieved by Magellan; 2) measuring the physical and electrical properties of crater haloes, aeolian features, Maxwell Montes, etc via full Stokes' polarization parameter imaging; 3) testing wavelength independent radar scattering models using high time resolution observations of the sub-radar area on Venus (incidence angles less than 10 deg) at both 13 cm and 70 cm wavelengths. The topographic measurements will be done interferometrically using Arecibo and the 100 m Green Bank telescope. The polarization mapping will build on our current successful analysis of similar data taken in 1999.

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I do NOT want to do remote observing.

**Instrument Setup**

S-Band radar                      430 CH receiver    430 CH radar            S-band receiver

**Atmospheric Optical Instruments:**

**Special Equipment or setup:** Standard S-Band and 430 MH radar equipment. New 20 MHz sampling systems to be used at Green Bank and, possibly, Arecibo.

**RFI Considerations**

**Frequency Ranges Planned**

429 - 431  
2378 - 2382

This proposal requires coordination with AFTWF within the band 425-435 MHz.