

## Quarterly Report

Time Period: for July - September, 1995

Zhengming Wan  
University of California at Santa Barbara

Contract Number: NAS5-31370

### A) Near-term Objective

1. Beta 3 LST delivery.
2. To measure spectral emissivities of terrestrial materials.
3. Field campaign for validation of LST algorithm.

### B) Task Progress

1. Beta 3 code of the level 2 LST product was delivered in September. SDP and M-API toolkits have been applied in the beta 3 code.

2. Methods and experiment procedures for TIR spectral BRDF and emissivity have been developed. Hemispherical emissivities and TIR BRDF measurements have been made for samples of water, soils, sands, vegetation leaves using the integrating sphere system and the TIR spectrometer pointing system in our laboratory. Results were presented on the MODIS Vicarious Calibration Workshop, August 7-11, Wallops Island, VA.

3. A field campaign was successfully conducted in Railroad Valley, NV in early August. During the field campaign, surface spectral BRDF and surface temperature measurements were made over the test site and MAS MAS data were acquired. The JPL ASTER group joined the field campaign with TMIS flight and surface temperature measurements. This may be the first field campaign with joint MAS and TIMS flights. According to preliminary analysis of one MAS scene received, the quality of the MAS data seems good. NOAA AVHRR data on the same date was ordered. Detail validation of the LST algorithm will be conducted as soon as full MAS data and AVHRR data are received.

4. Other activities: presented a paper on IGARSS'95, July 10-14, Firenze, Italy; attended MODLAND-SDST meeting, July 25-27, Boston, MA.

### C) Anticipated Activities During the Next Quarter

1. To establish emissivity knowledge base of land-surface materials.
2. Field campaign and MAS flight over test sites in southern California scheduled in October.
3. To deliver beta 3 code of the level 3 LST product.

### D) Problems/Corrective Actions (None)

E) Publications

Z. Wan, and J. Dozier, A viewing-angle dependent split-window method for retrieving land-surface temperatures from space, IGARSS'95, pp. 1177-1179, 1995.

W. Snyder, and Z. Wan, Surface temperature correction for active infrared reflectance measurements, Applied Optics, submitted Sept. 1995.