



# Assessment of Albedo Derived from MODIS at the ARM SGP

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The MODIS BRDF/Albedo Products have been available at 1km resolution since March 2000 with data from the Terra platform, and as a combined product since July 2002 with data from both the Terra and Aqua platforms. The retrieval algorithm utilizes all high quality, atmospherically corrected, cloud free surface reflectances acquired over a 16 day period and a semi-empirical kernel model to characterize the BRDF of the location. Only when insufficient data to sample the anisotropy is available is a lower quality backup algorithm employing *a priori* estimates of the surface BRDF based on landcover and season used. The entire data set is being reprocessed at 500m resolution with improved upstream atmospheric correction and cloud masking. Retrievals will be made every 8 days (based on the last 16 days) to increase the possibility of obtaining high quality results.

## ARM/SGP Central Facility and Extended Facility #15

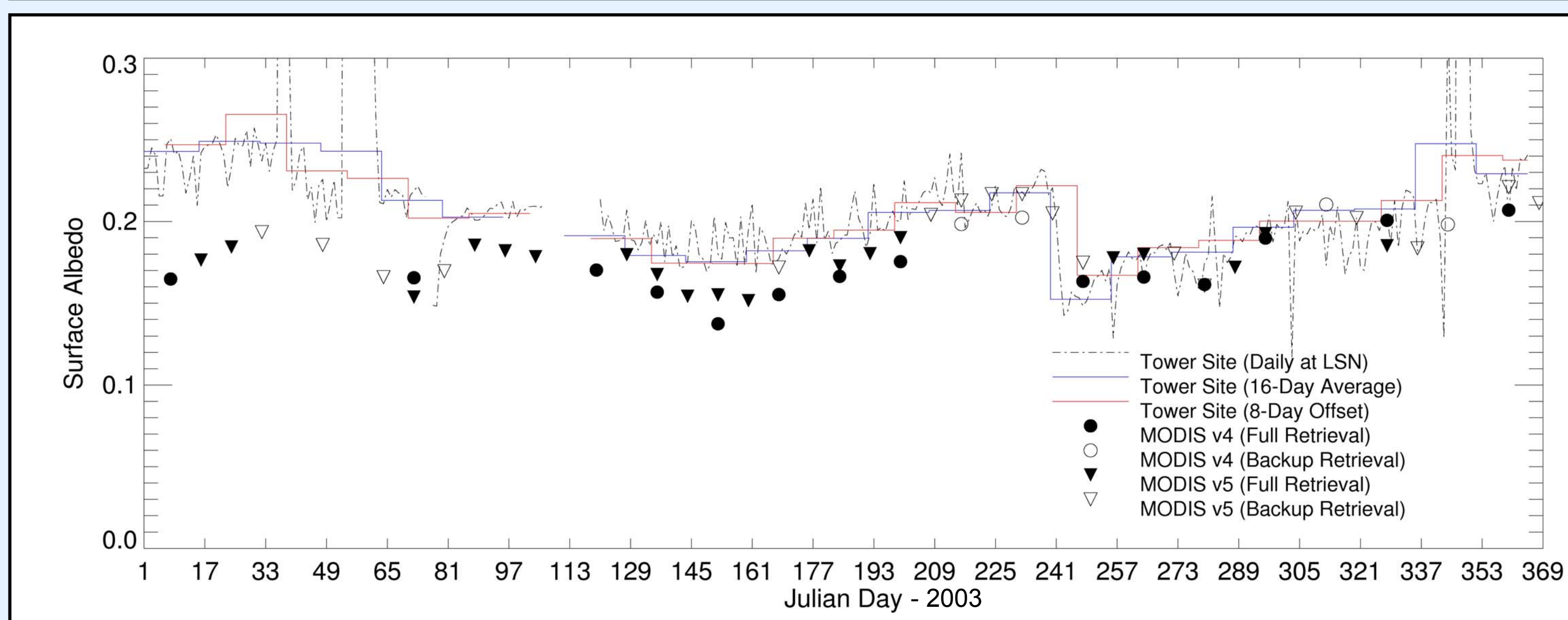
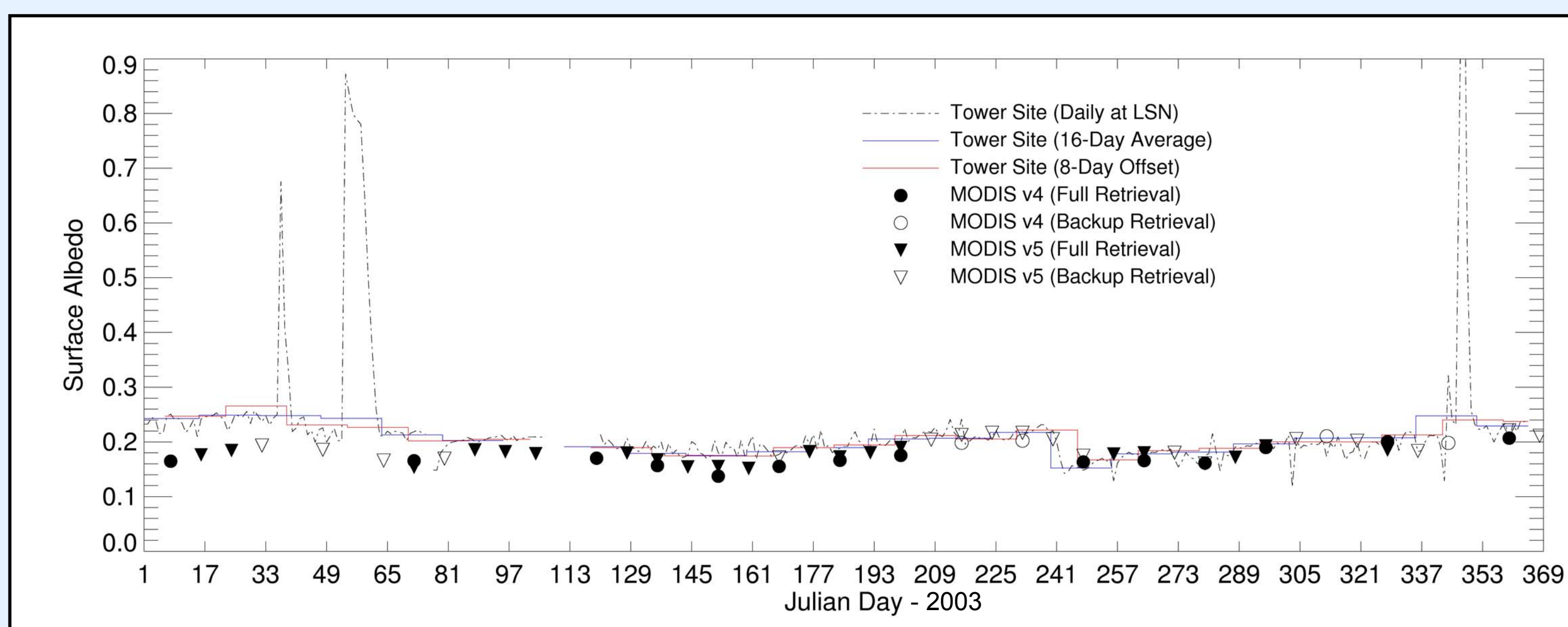


▲ White Sky Albedo from the MODIS version-4 1km product, MCD43B3, a true-color image in sinusoidal projection, nominal date 5/9/2003.

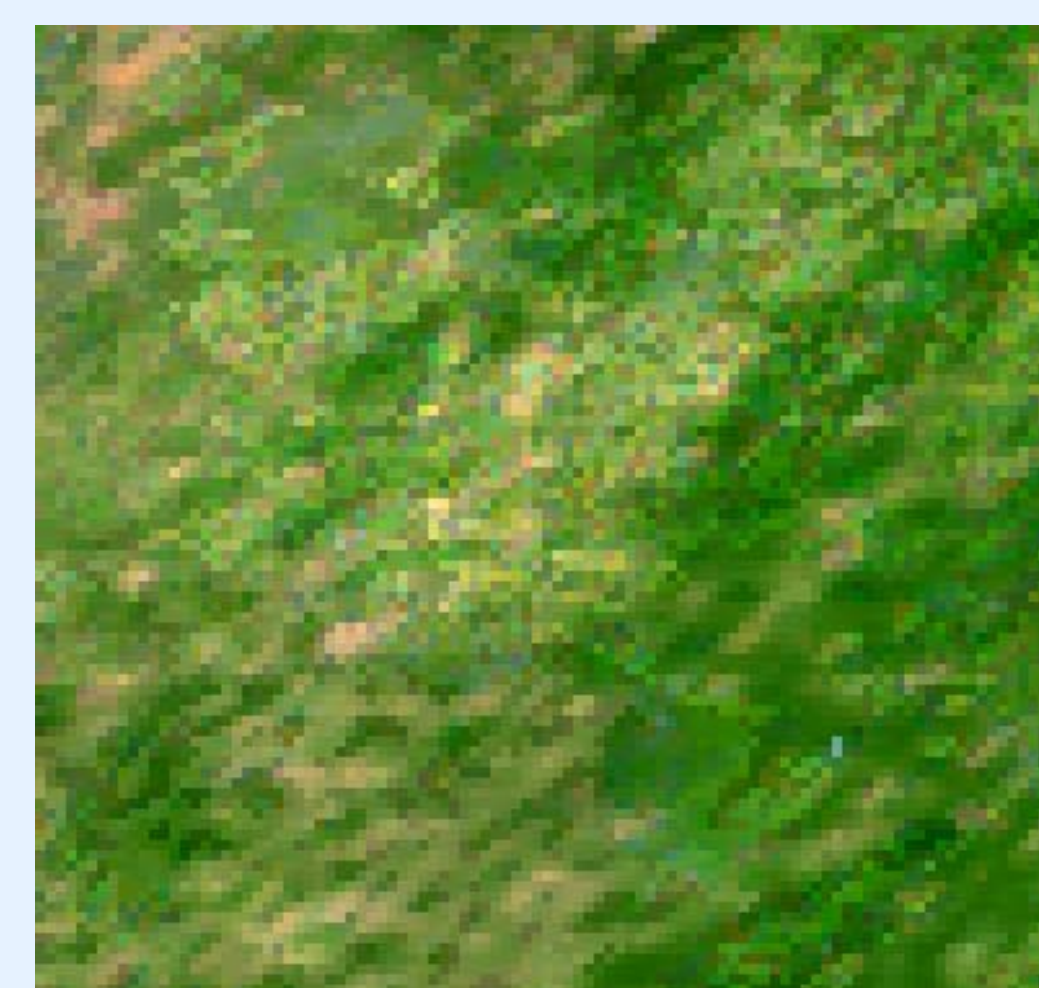
Initial test results at 8-day and 500m resolution over two ARM Southern Great Plains sites demonstrate consistency with and improvements upon existing 16-day, 1km products.

This new project will use ARM data for validation of the treatment of anisotropic multiple scattering between surface and atmosphere in applications of the MODIS BRDF/Albedo products. We will tap into the time sequences of measured surface albedo for the Southern Great Plains site and compare those with MODIS-based estimates that specifically account for anisotropic surface scattering. The focus will be on the effect of anisotropic surface scattering on the diffuse irradiance in order to determine the circumstances under which a correction for anisotropic effects is required.

## SGP Central Facility (CF): Time Series

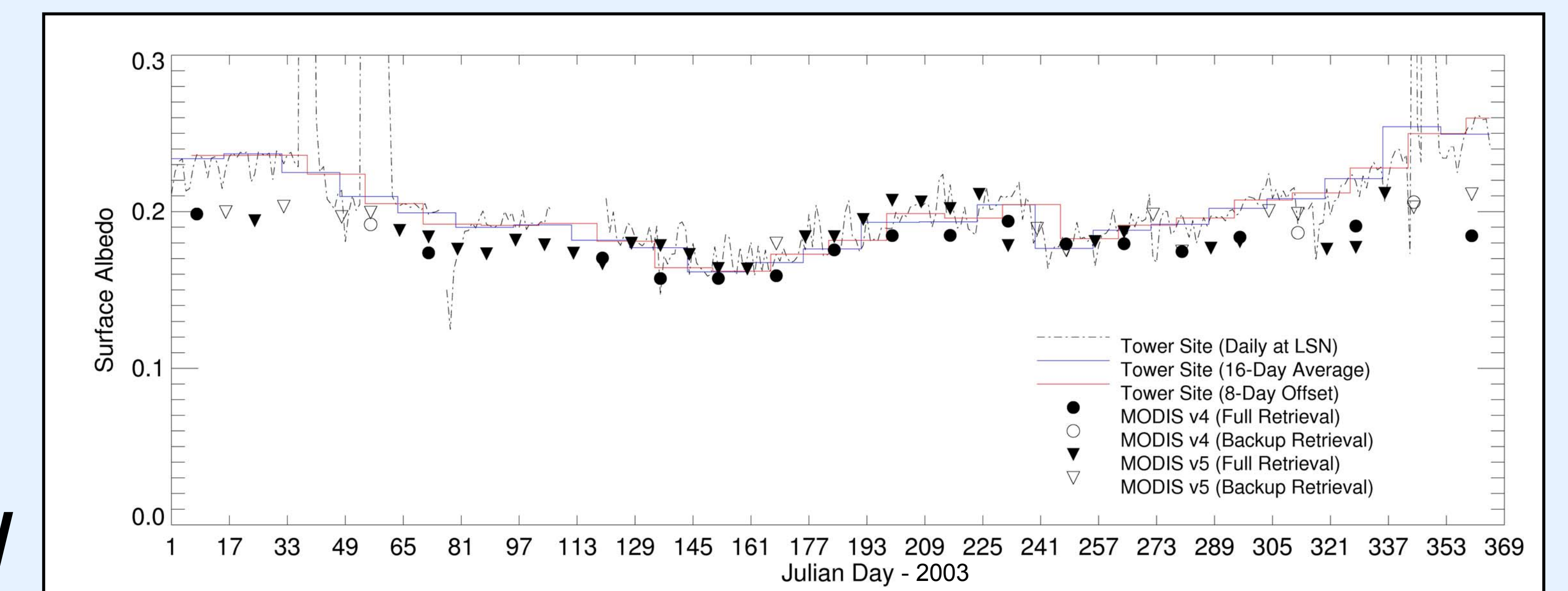
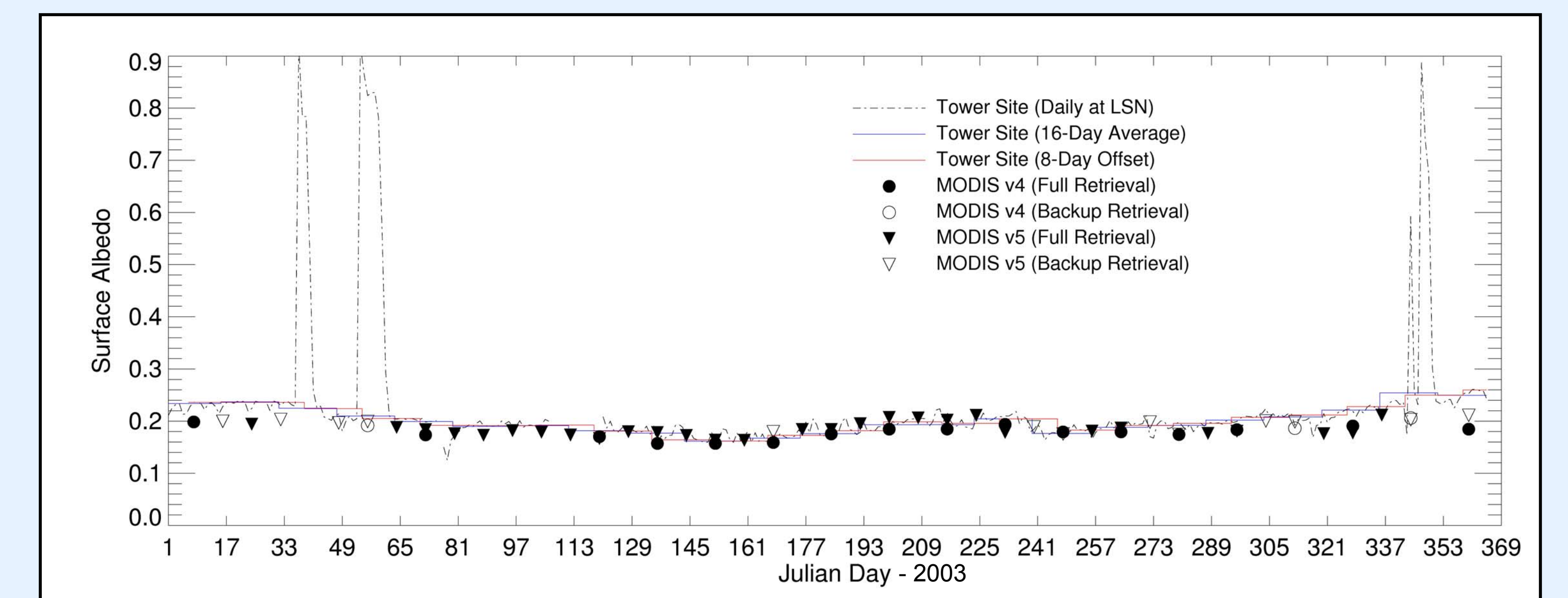


Close-up of the above image over Extended Facility #15.



Close-up of the same location using MODIS version-5 500m data.

## SGP Extended Facility #15 (EF-15): Time Series



<http://www-modis.bu.edu/brdf/>