

# **Vicarious Calibration at Shizafon Site, Negev Desert, Israel**

**Prof. Arnon Karnieli**

**The Remote Sensing Laboratory**

**Jacob Blaustein Institute for Desert Research**

**Ben-Gurion University of the Negev**

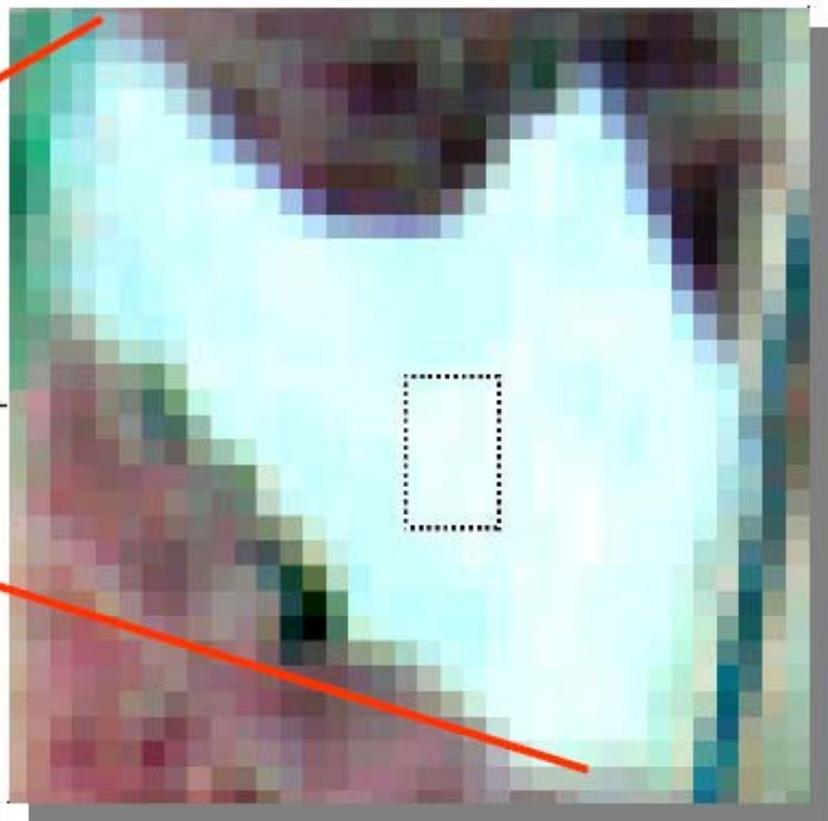


*Science from Above*

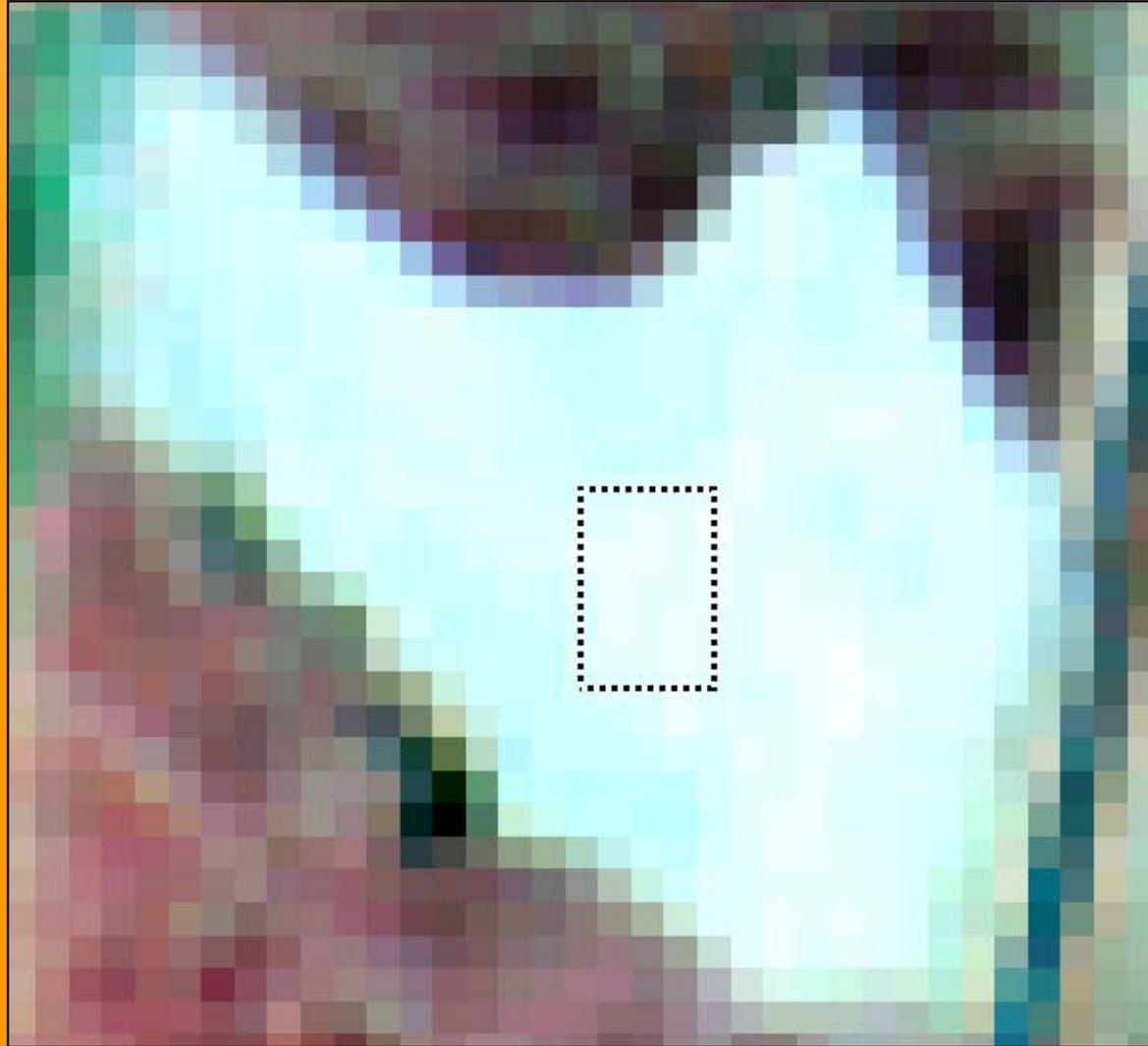
# Shizafon Playa – site location



# Shizafon Playa – site location



# SPOT – Pixels Location



# Site drawbacks

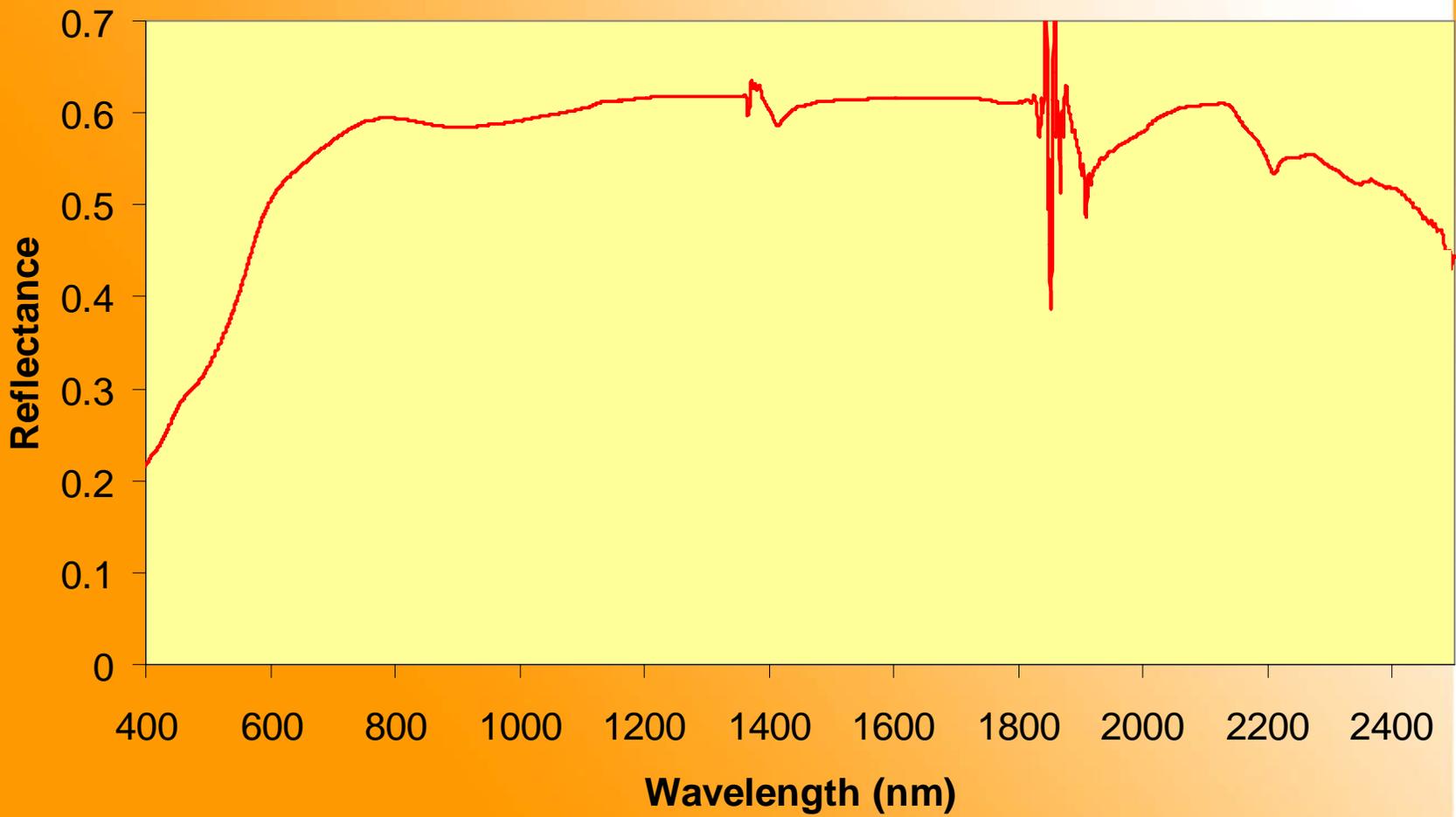
- Elevation is 340 m above MSL.
- The total size of the playa is about 200,000 sq. m (0.2 sq. km).

# Advantages of Shizafon Playa

- High reflectivity values and spectral uniformity
- High spatial uniformity
- The sites are nearly lambertian
- High probability of cloud-free days.
- Remote location, far from anthropogenic (urban and industrial) aerosols.
- Precipitation is extremely low (few tens of millimeters per year).
- The sites are without any vegetation, thus the seasonal dynamics is minimal.
- The sites are located relatively far from the sea, thus the influence of atmospheric water vapor is minimal.
- High accessibility of the sites and distance from Ben Gurion University.

# Shizafon Playa – spectral characteristics

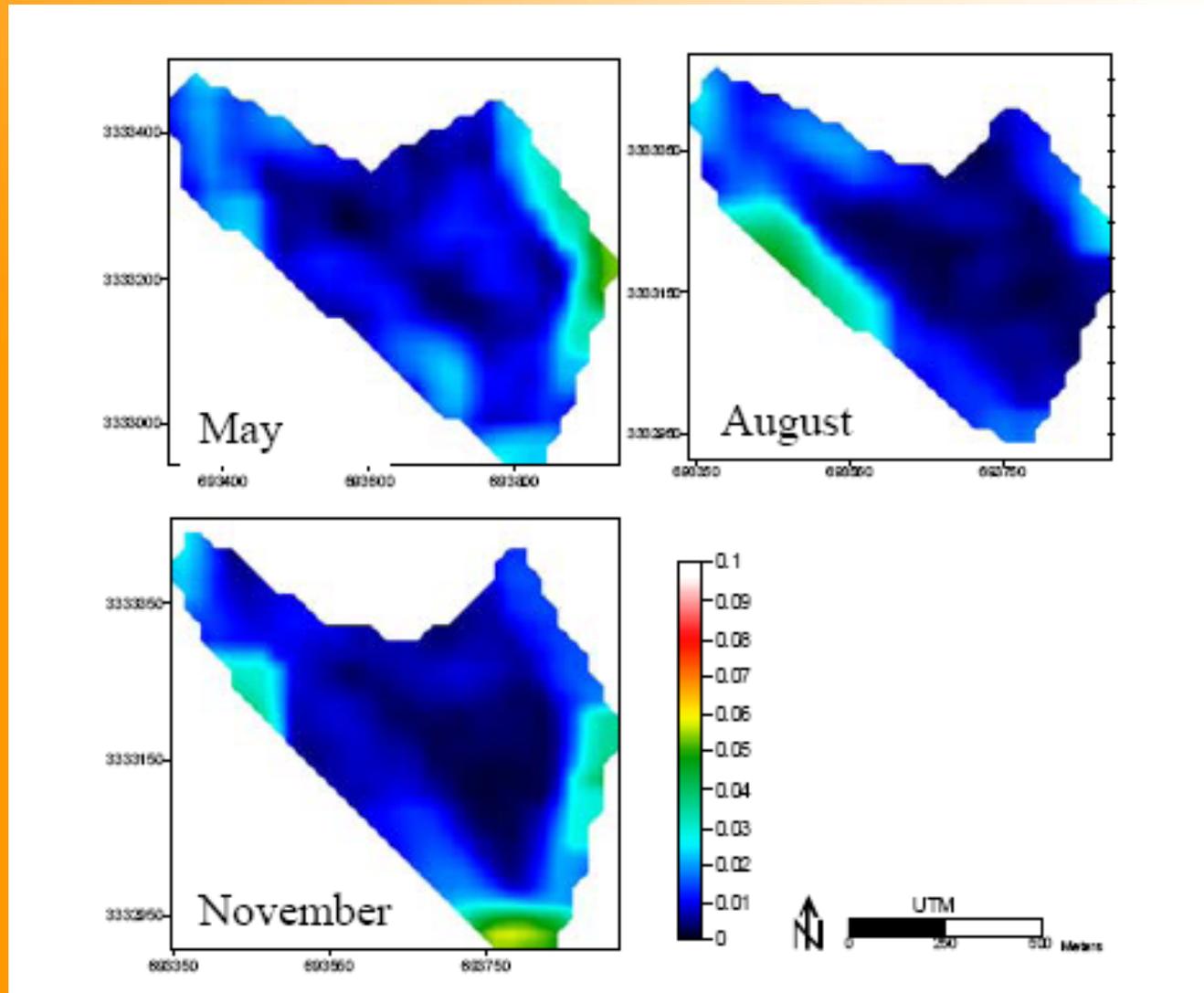
High reflectivity values and spectral uniformity



— Reflectance

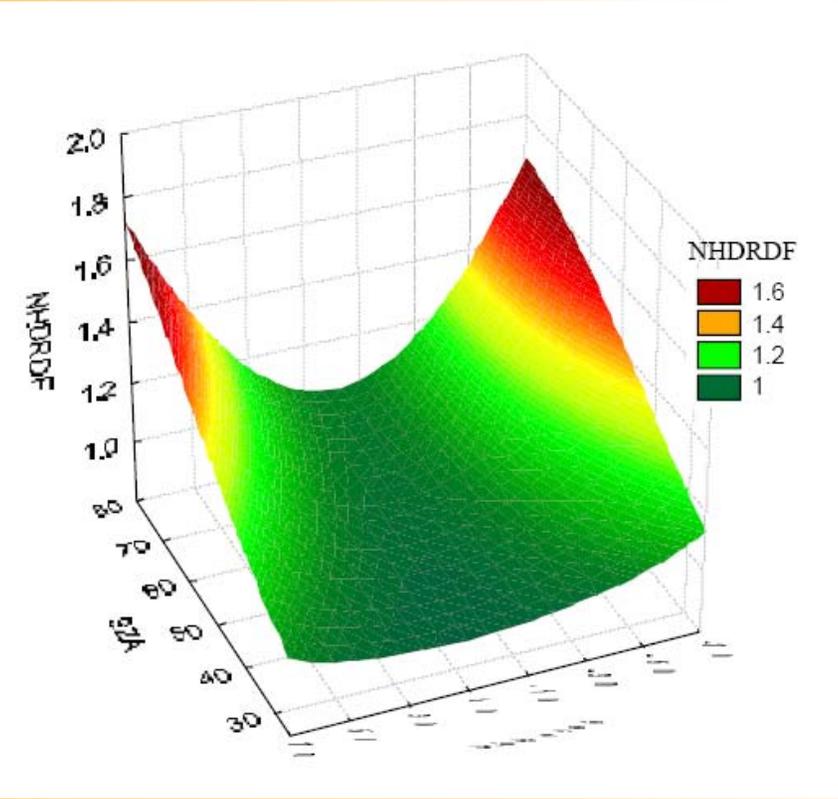
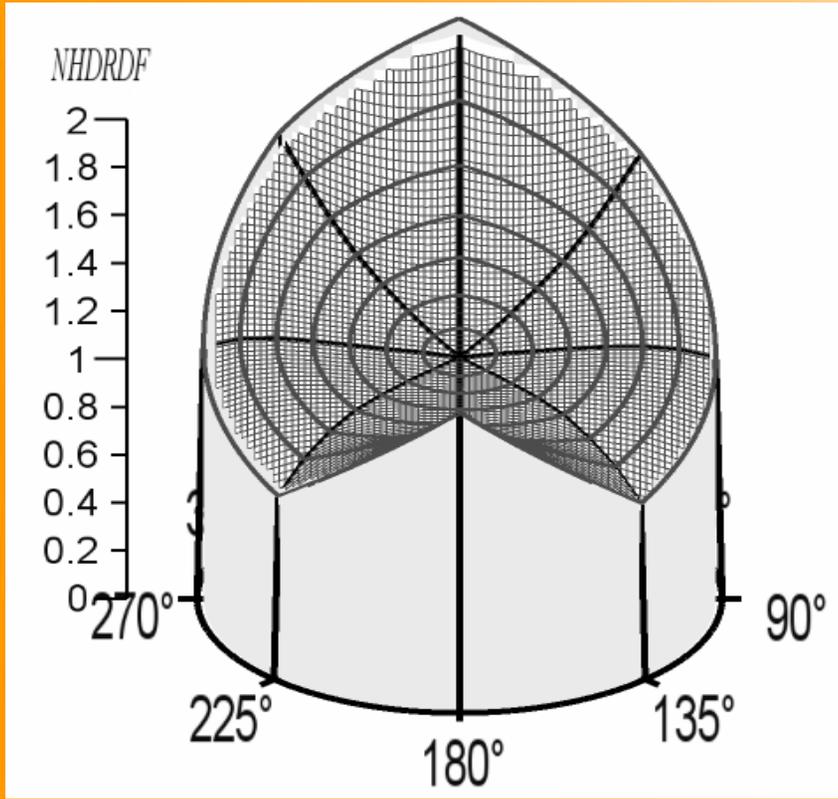
# Spatial Uniformity

High spatial uniformity



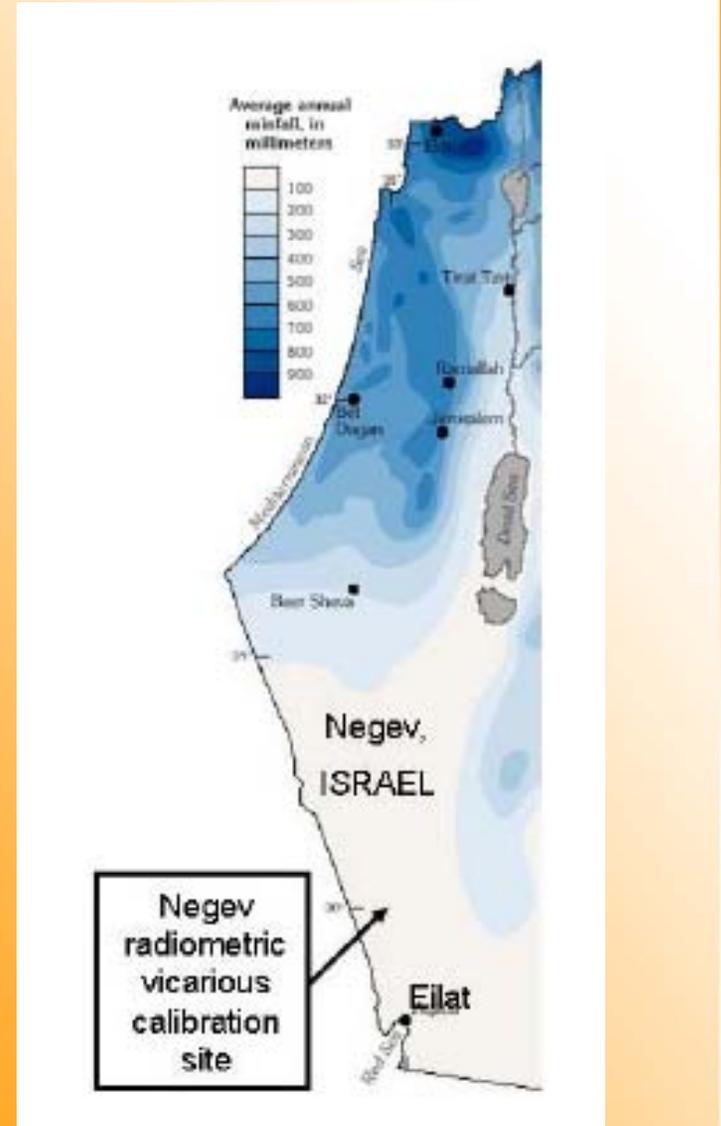
# BRDF characteristics

The site is nearly lambertian

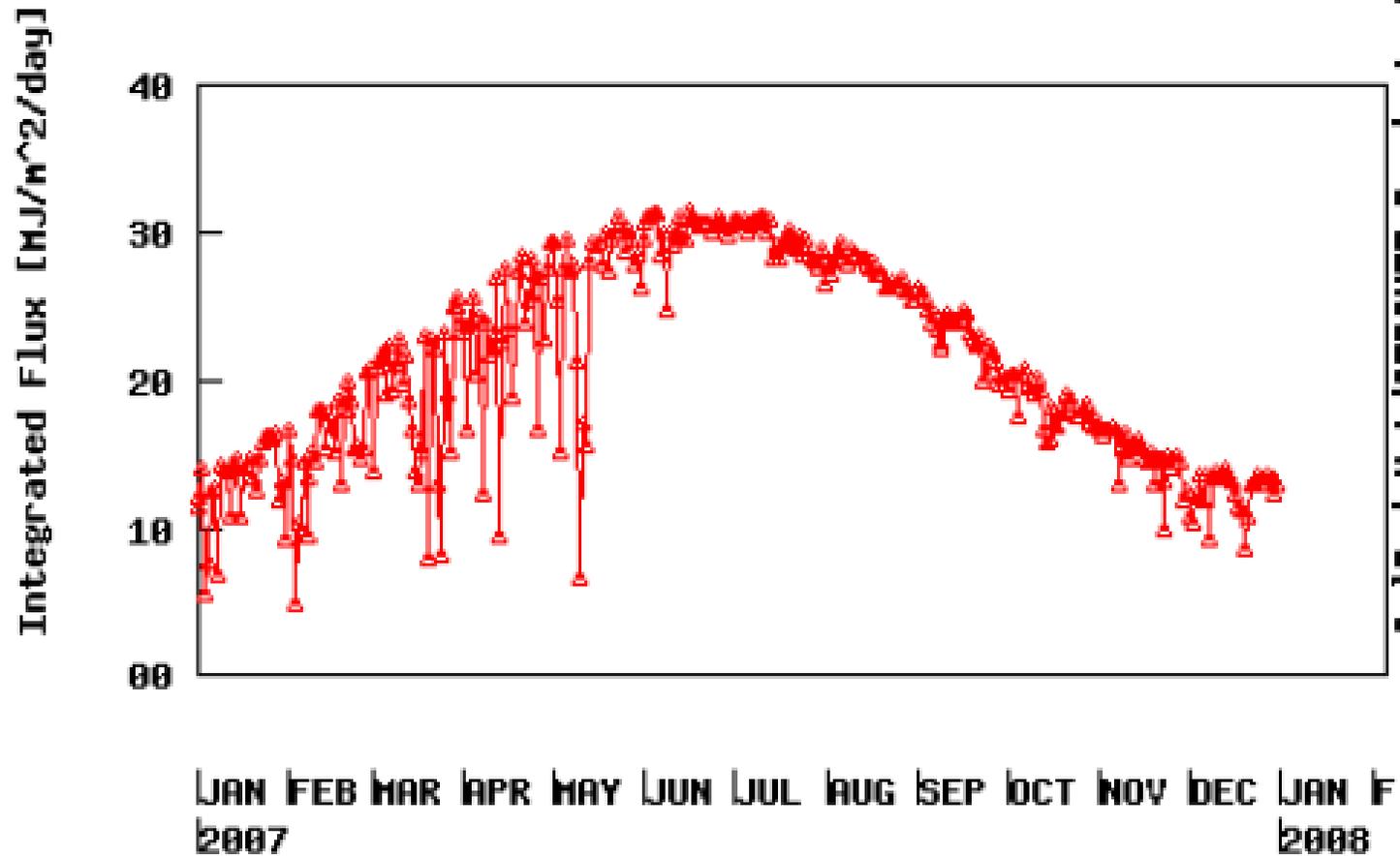


# Precipitation

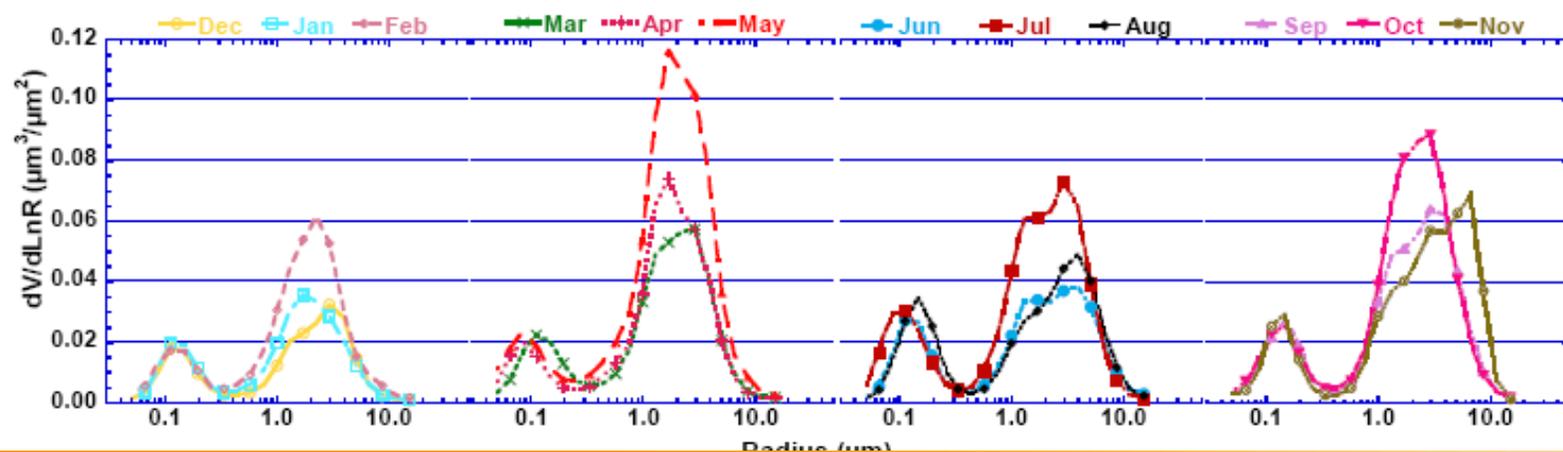
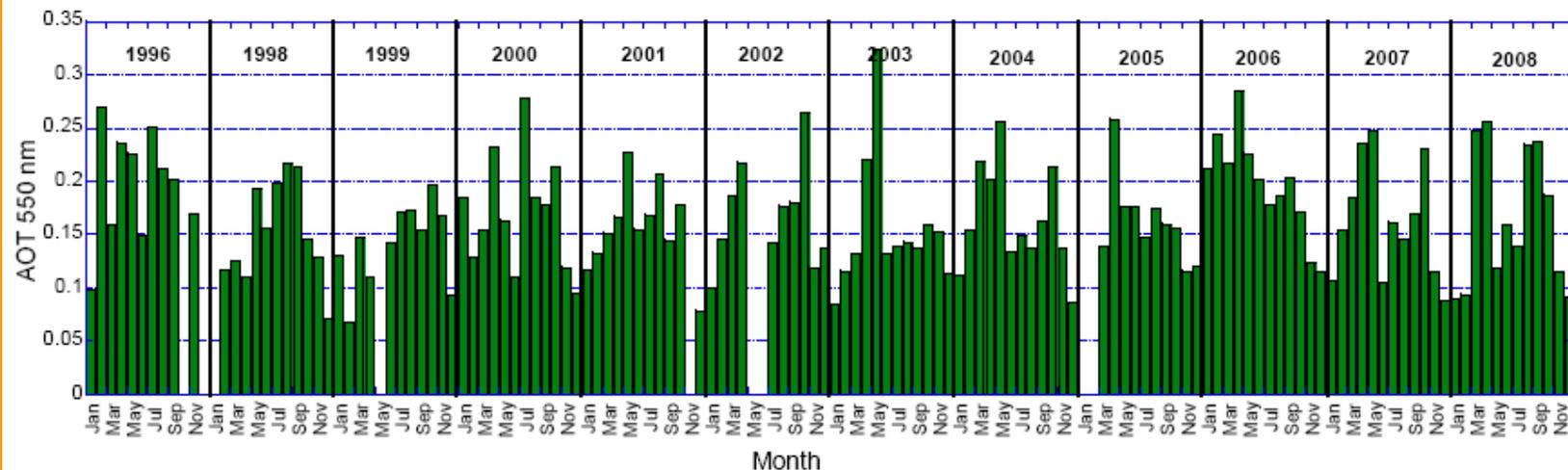
Low precipitation (less than 25 mm annually), results in no vegetation, and thus no seasonal variation.



High probability of cloud-free days

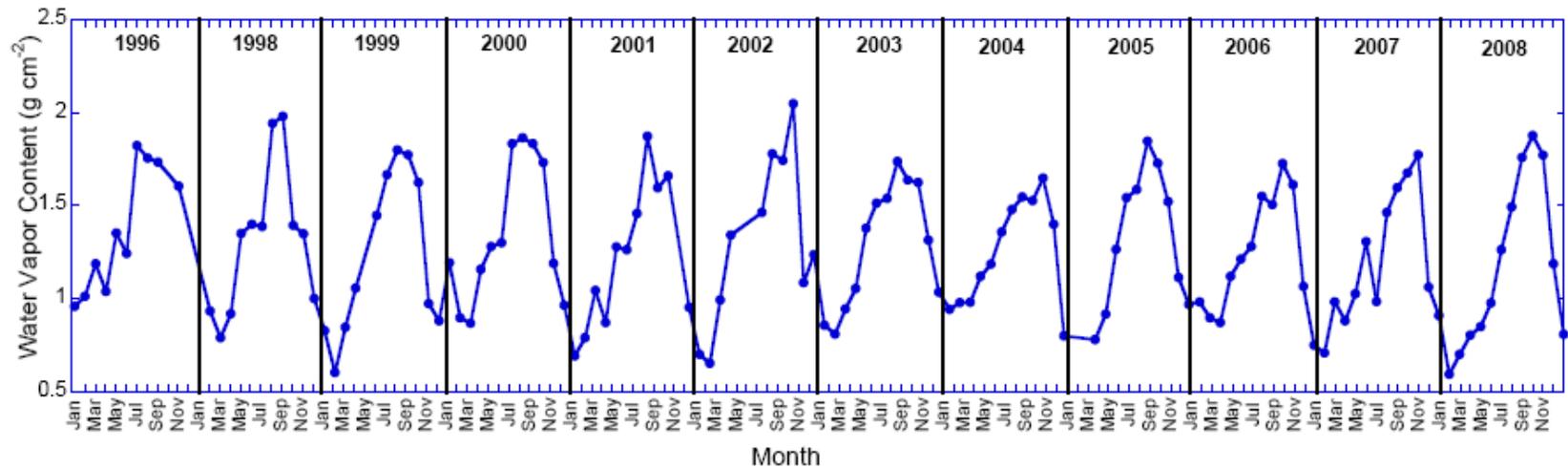


Remote location, far from anthropogenic (urban and industrial) aerosols. However, dust storms may occur.



# Water Vapor

The site is located relatively far from the sea, thus the influence of atmospheric water vapor is minimal



# Accessibility

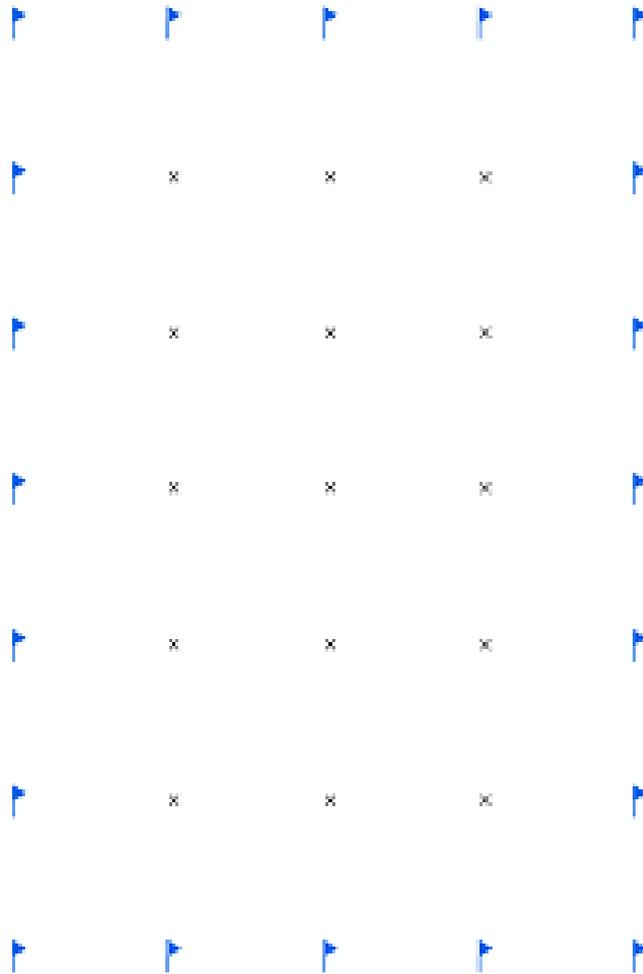
High accessibility (120 km) of the sites and distance from Ben Gurion University.



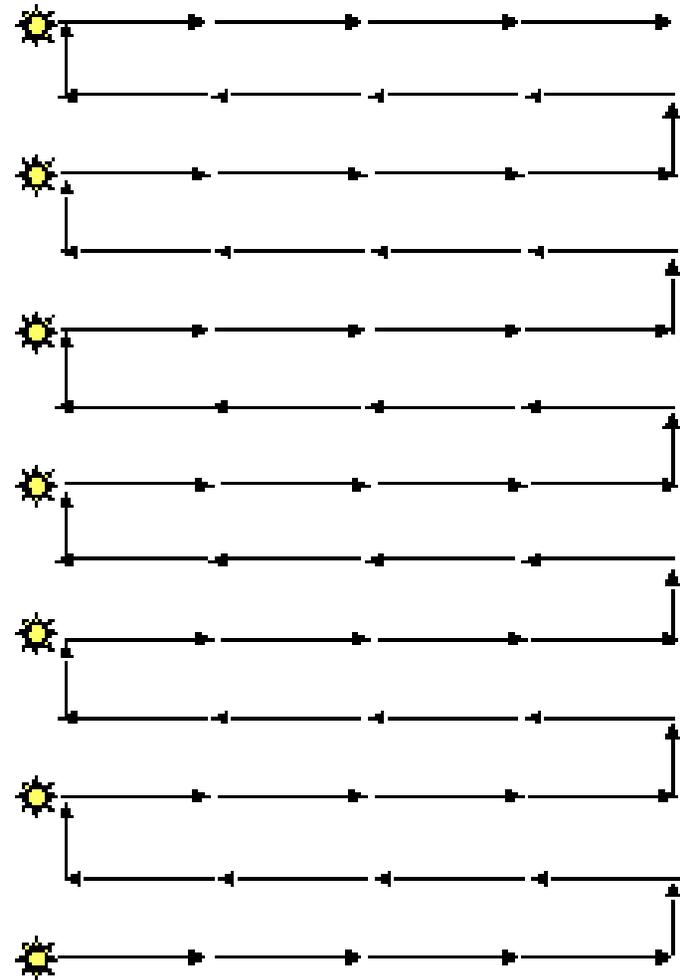
# Instrumentation - ASD



# ASD field setting



(a)



☀ = White reference

(b)

# Instrumentation – white reference plate



# Instrumentation – Li-Cor/BRDF



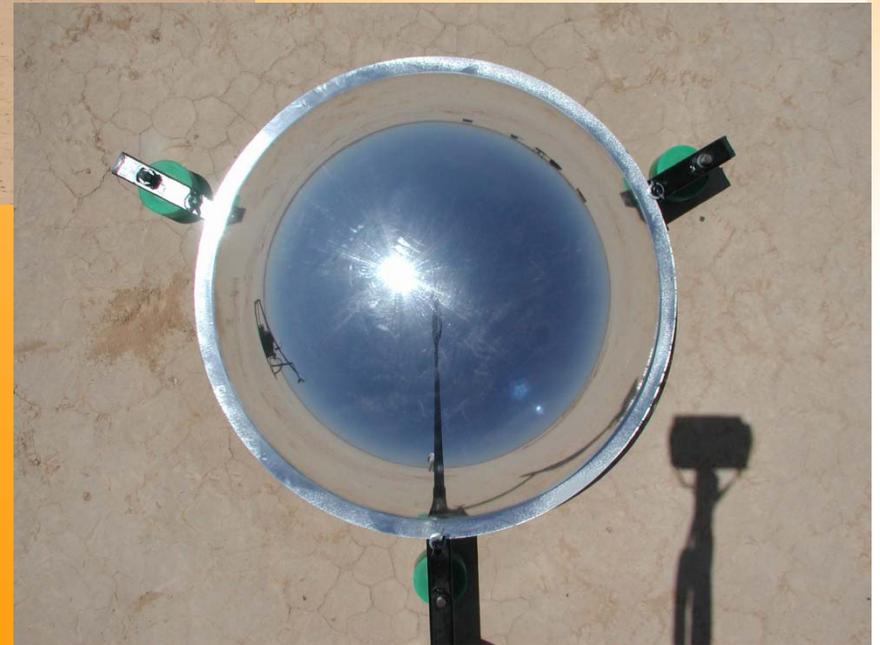
# Instrumentation – Microtops-II



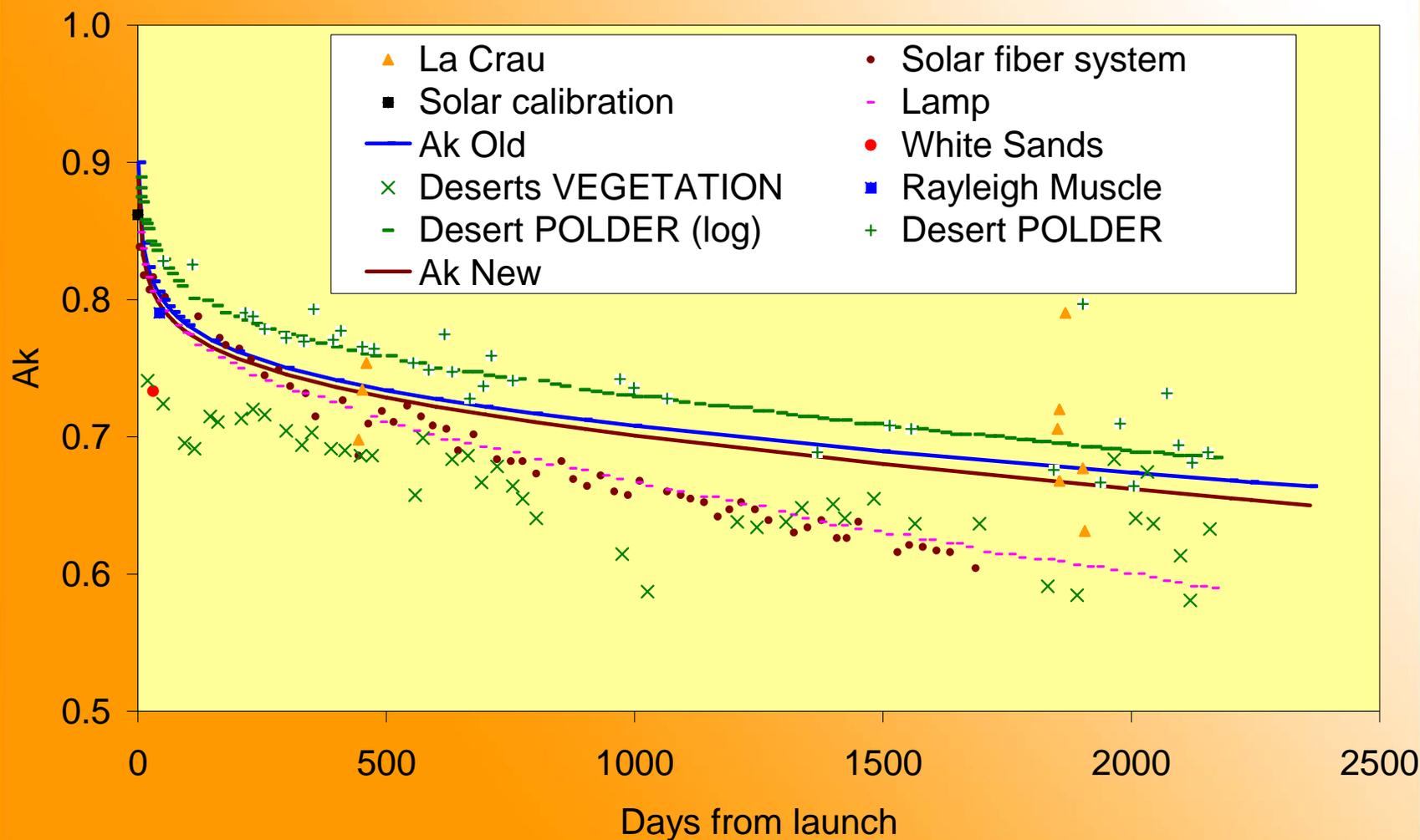
# Instrumentation - CIMEL



# Instrumentation – Total Sky Imager

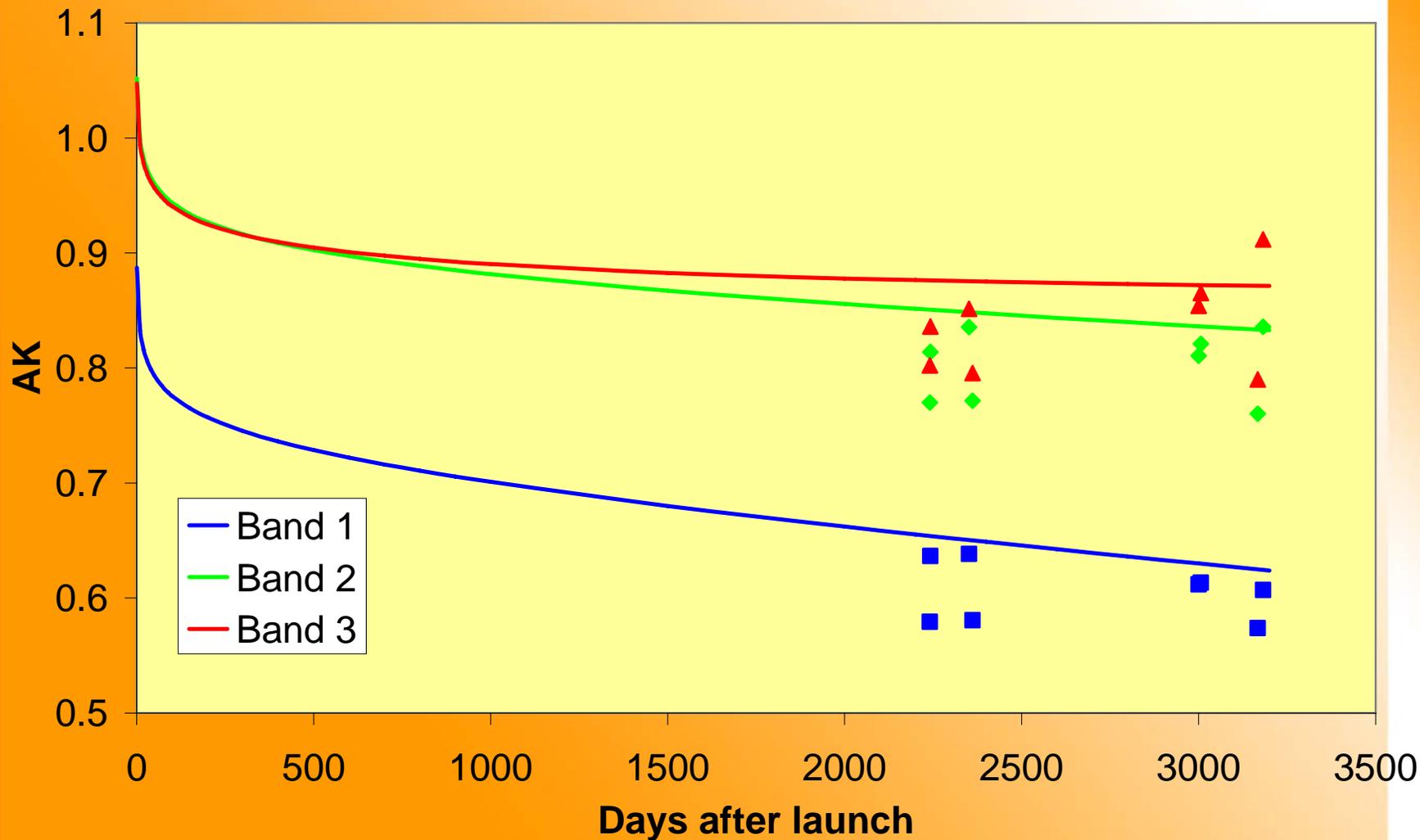


# SPOT Calibration, Band 1



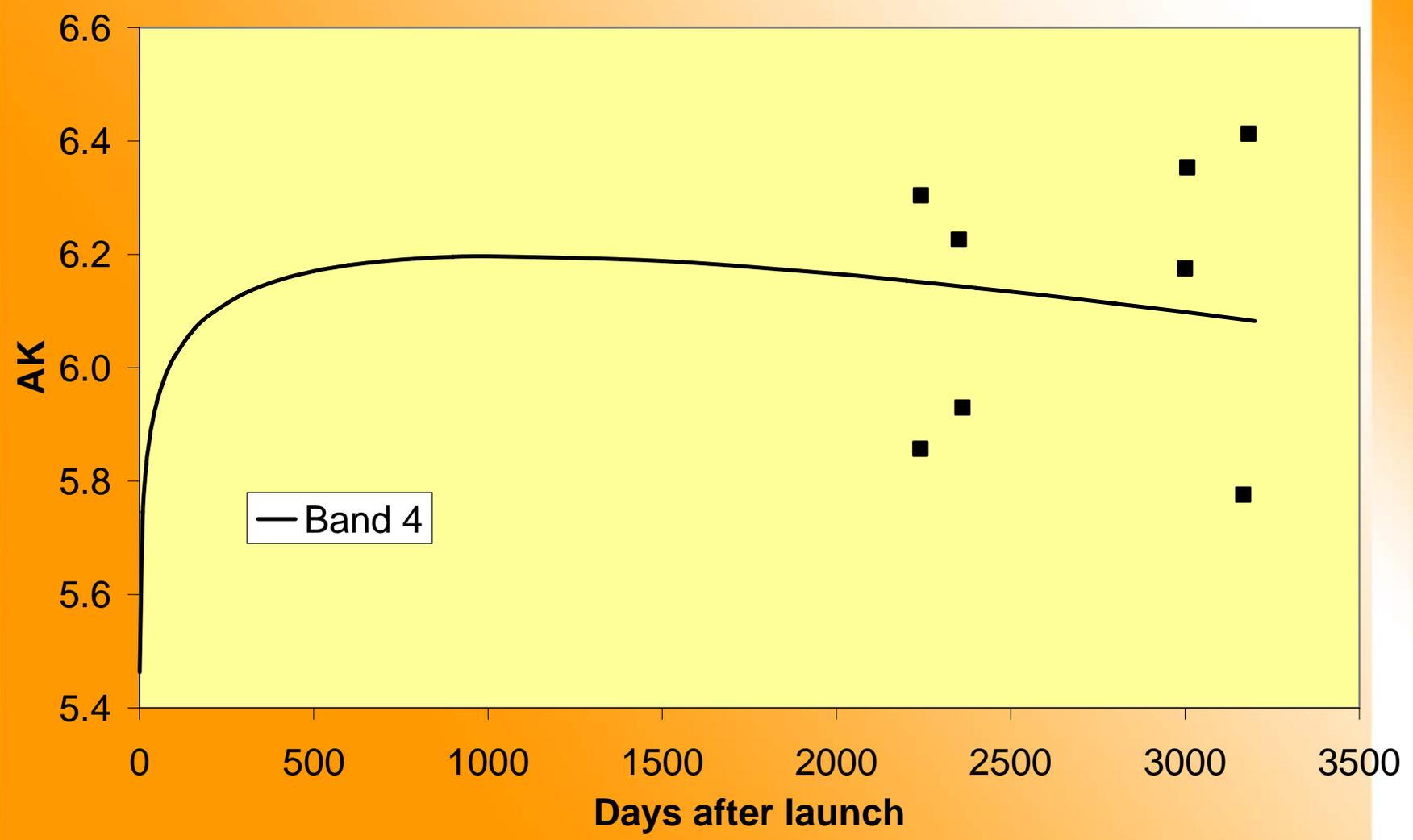
# Vicarious calibration results

SPOT-4, results of all campiangs at Shizafon Playa, Bands 1-3



# Vicarious calibration results

SPOT-4, results of all campiangs at Shizafon Playa, Band 4



Thank You!