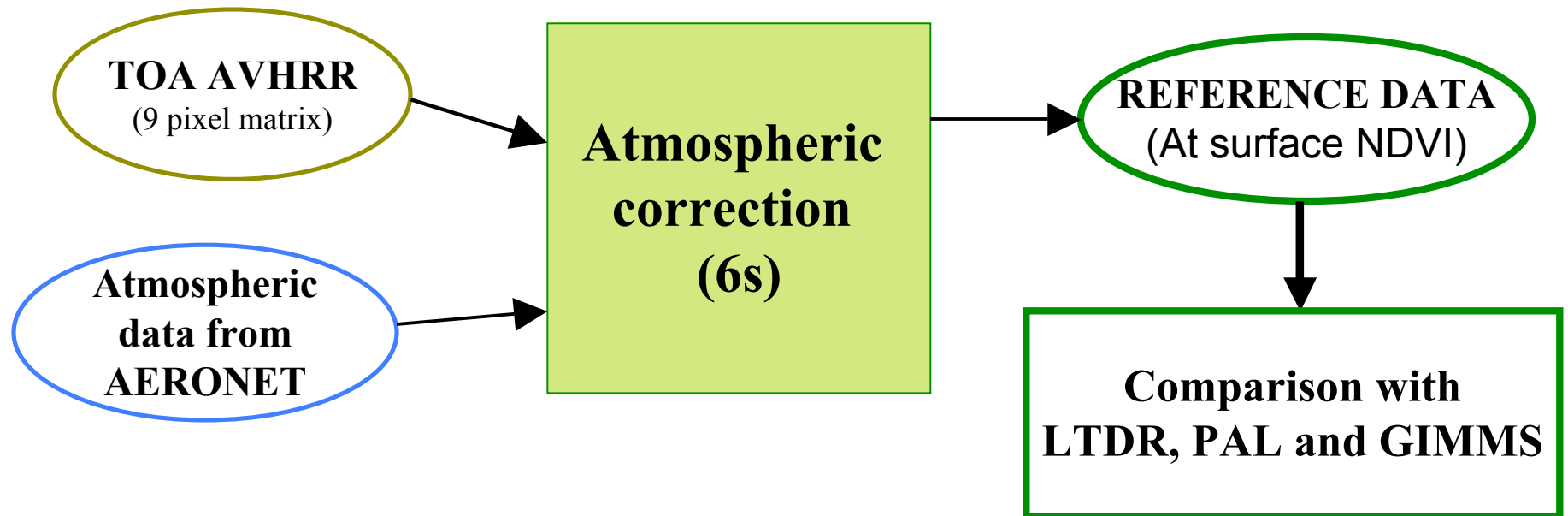


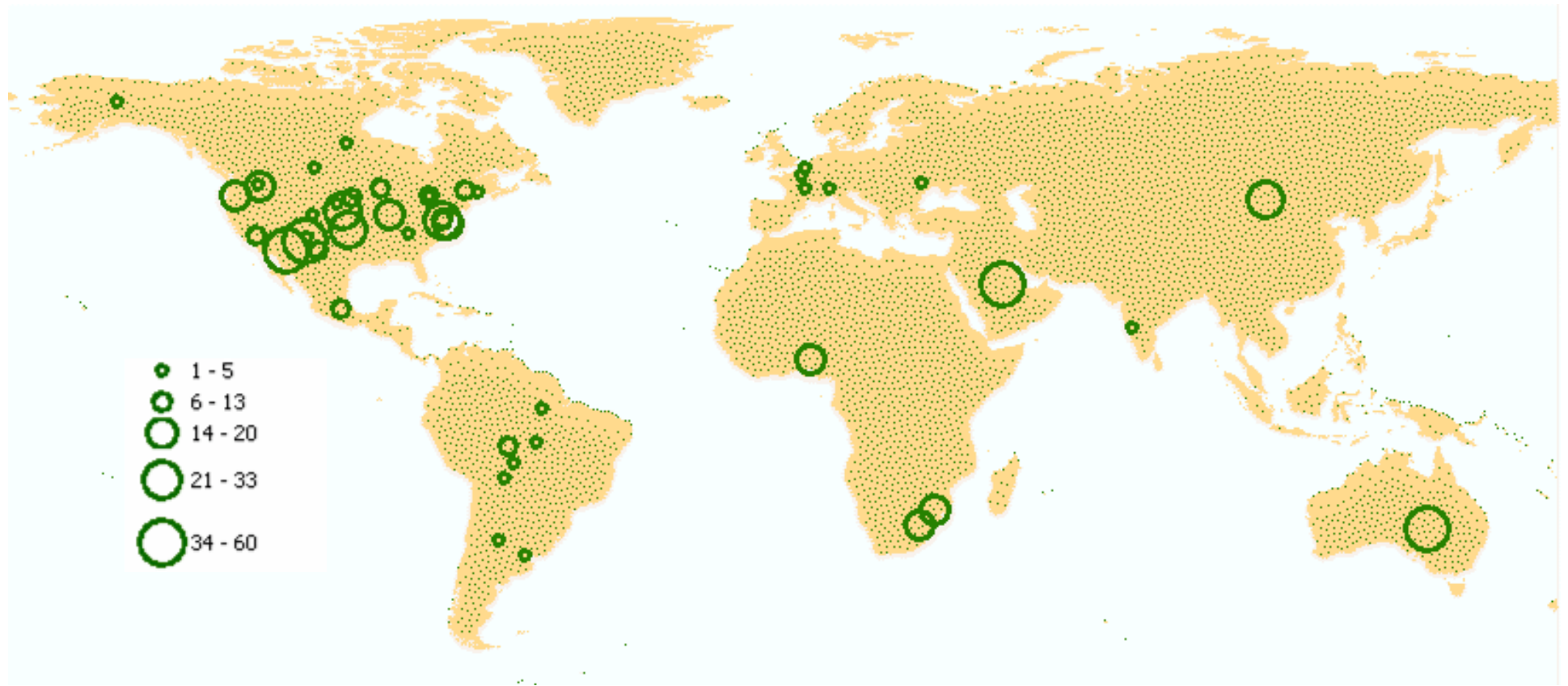
Evaluation of LTDR data
at
AERONET sites
(For Year 1999)

Jyothy Nagol

Reference Data



- ❑ **Reference Data:** Comprehensive atmospheric correction of 9 pixels around AERONET sites.
- ❑ Comparison of LTDR and other NDVI datasets with reference data



Sites: **48 sites**

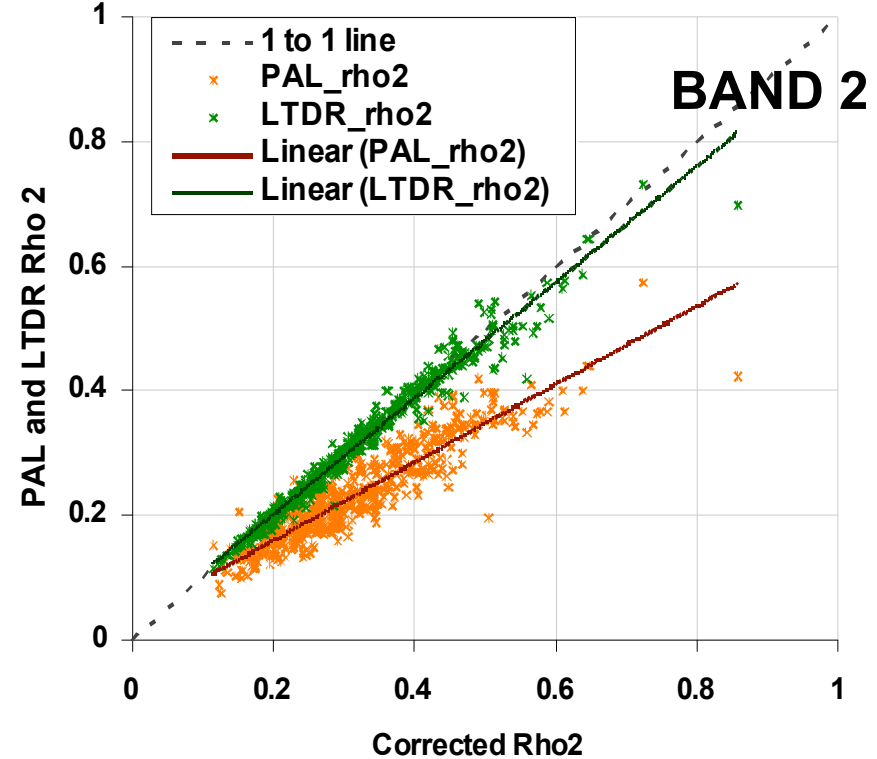
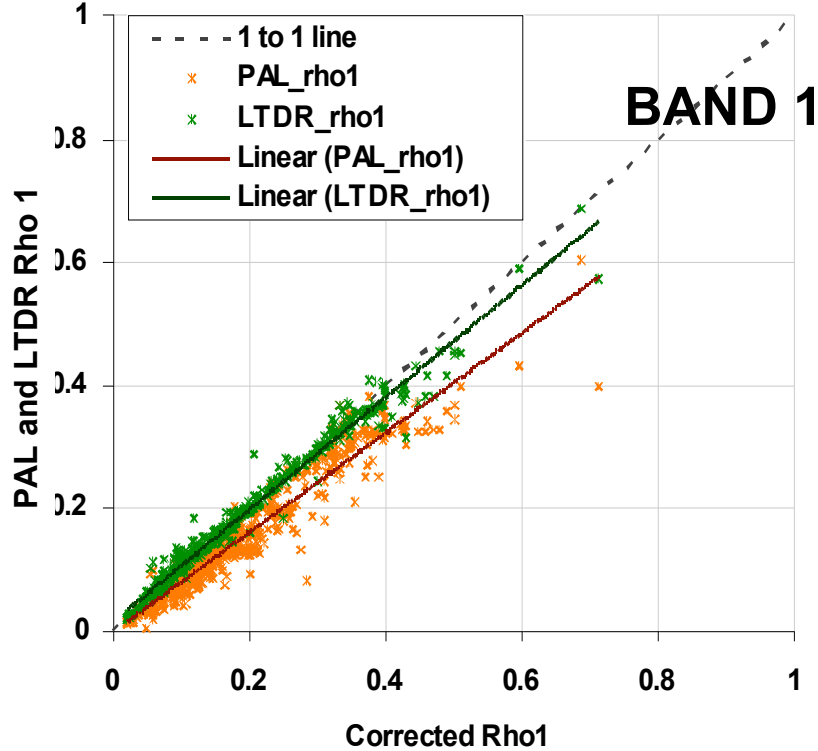
Data points: **580**

Comparison with Reference data

- ❑ Daily data comparisons (*all data*)
 - TOA, PAL, LTDR-beta_release(Dec_06)
- ❑ 15 day composite comparison (*site*)
 - TOA, PAL, LTDR and **GIMMS**
- ❑ Monthly composite comparison (*site*)
 - LTDR, TOA, **GVI**

NOTE: ALL data is constrained to View zenith angle < 42

Daily data comparisons
for
LTDR, PAL, and TOA



Under estimation

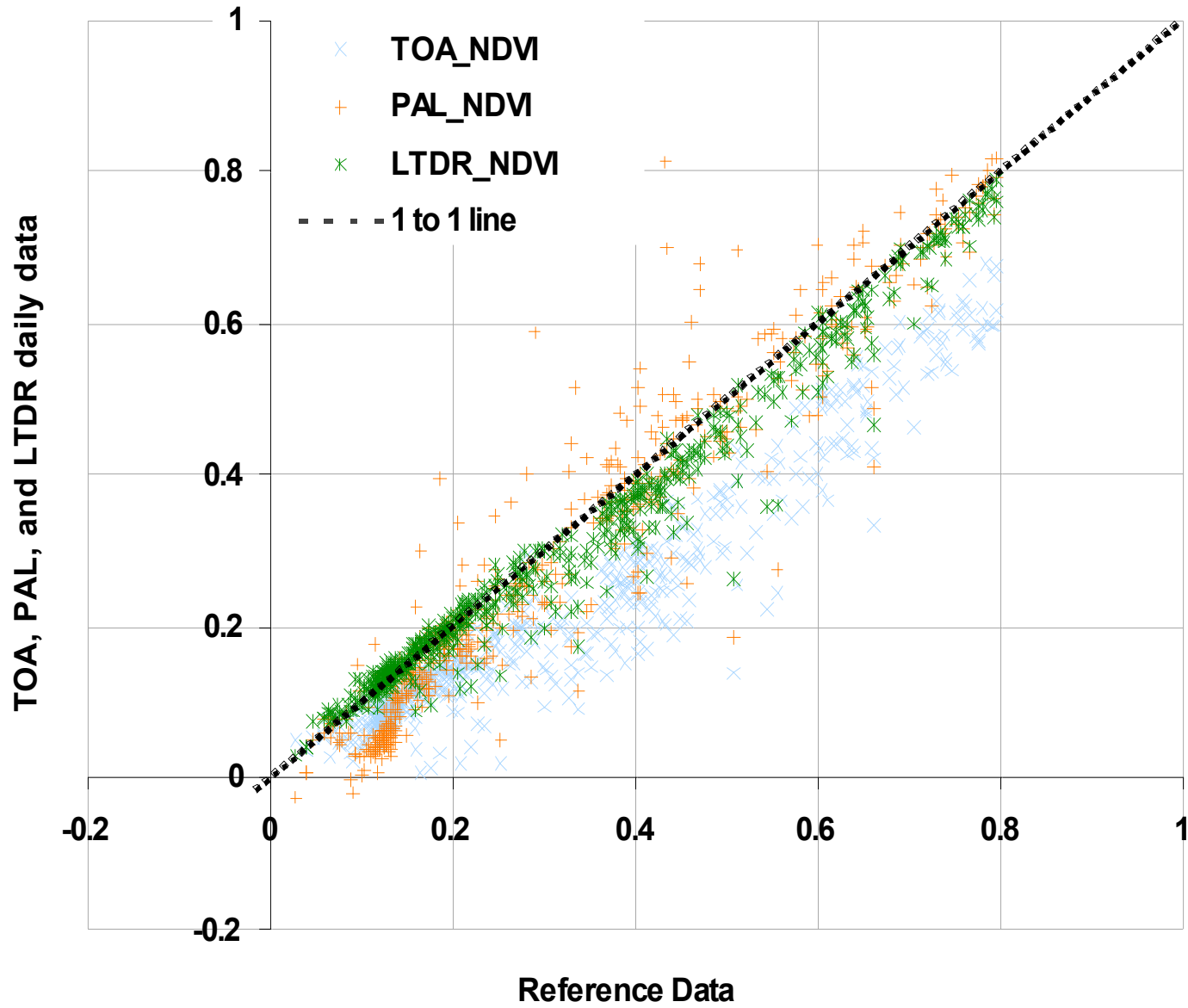
NDVI is more sensitive to Red.

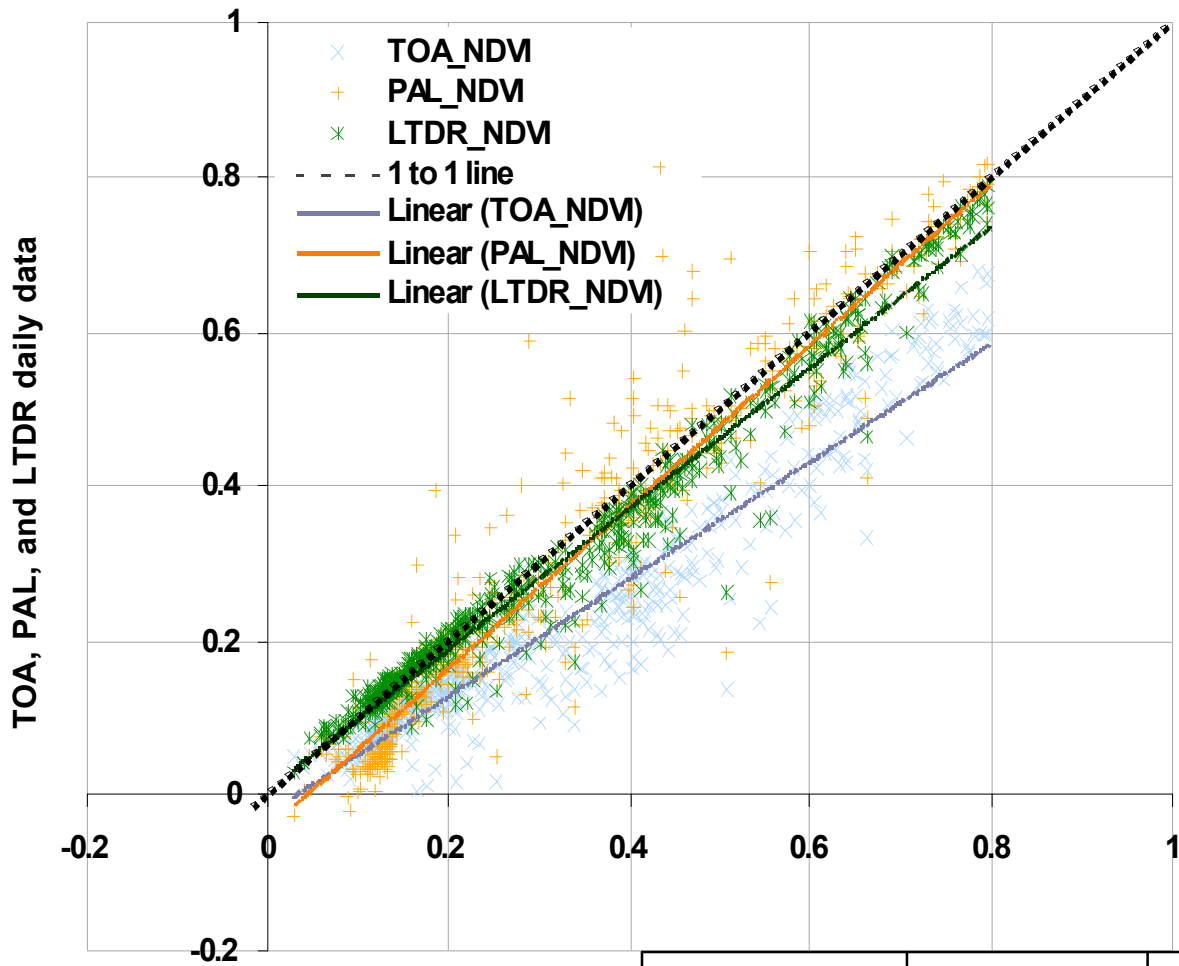
Different Calibration:

PAL: Stable desert target vicarious calibration (Rao and Chen, 1996)

LTDR: ocean-cloud vicarious calibration (Vermote and Kaufman, 1995)

NDVI



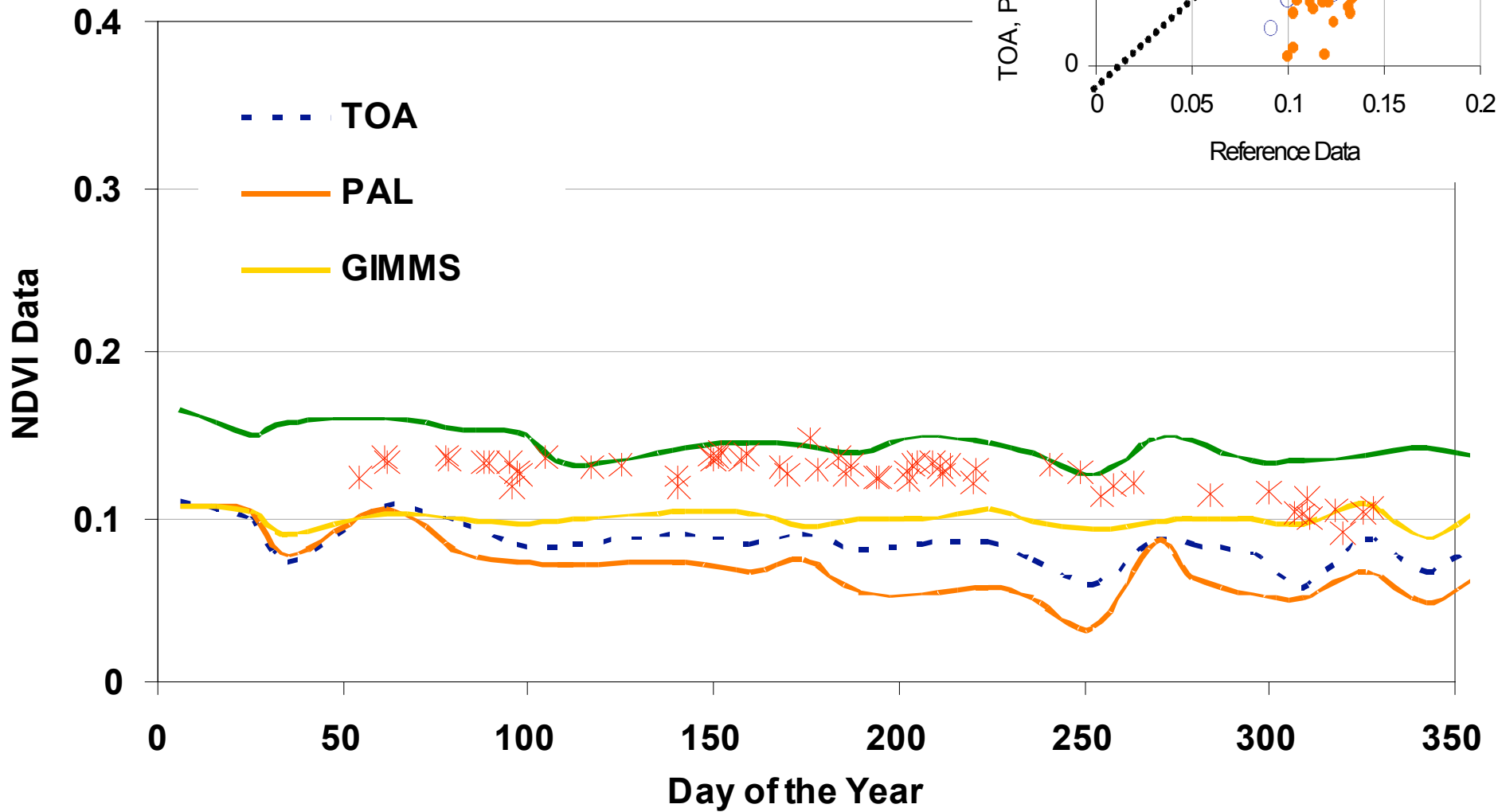


	RMSE	RMSE (< 0.3 NDVI)	RMSE (> 0.3 NDVI)
TOA	0.1432	0.0809	0.1974
PAL	0.0889	0.0707	0.1084
LTDR	0.0645	0.03121	0.0915

15 day composite
for
LTDR, PAL and GIMMS

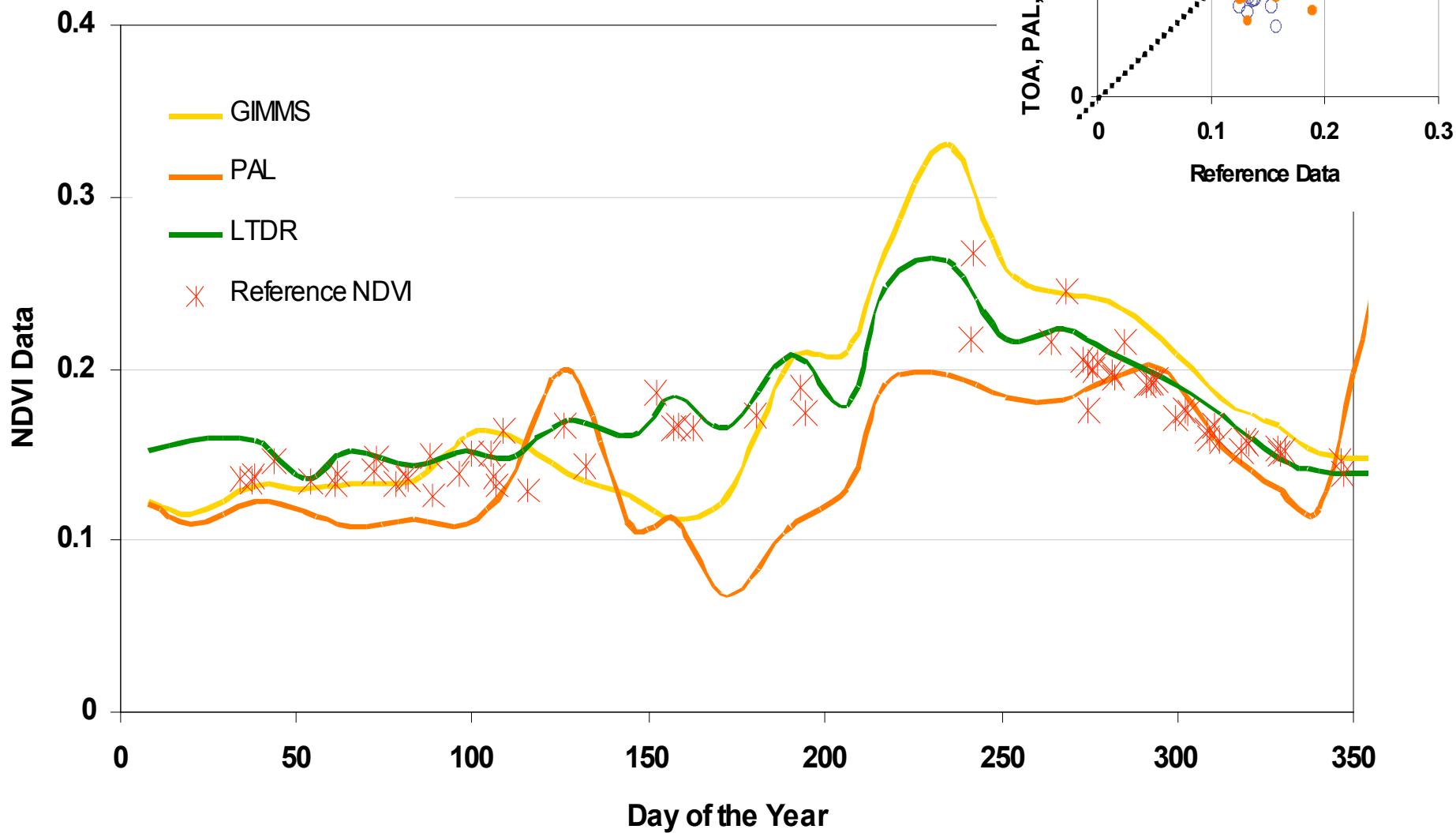
Desert site

Solar village, Saudi Arabia



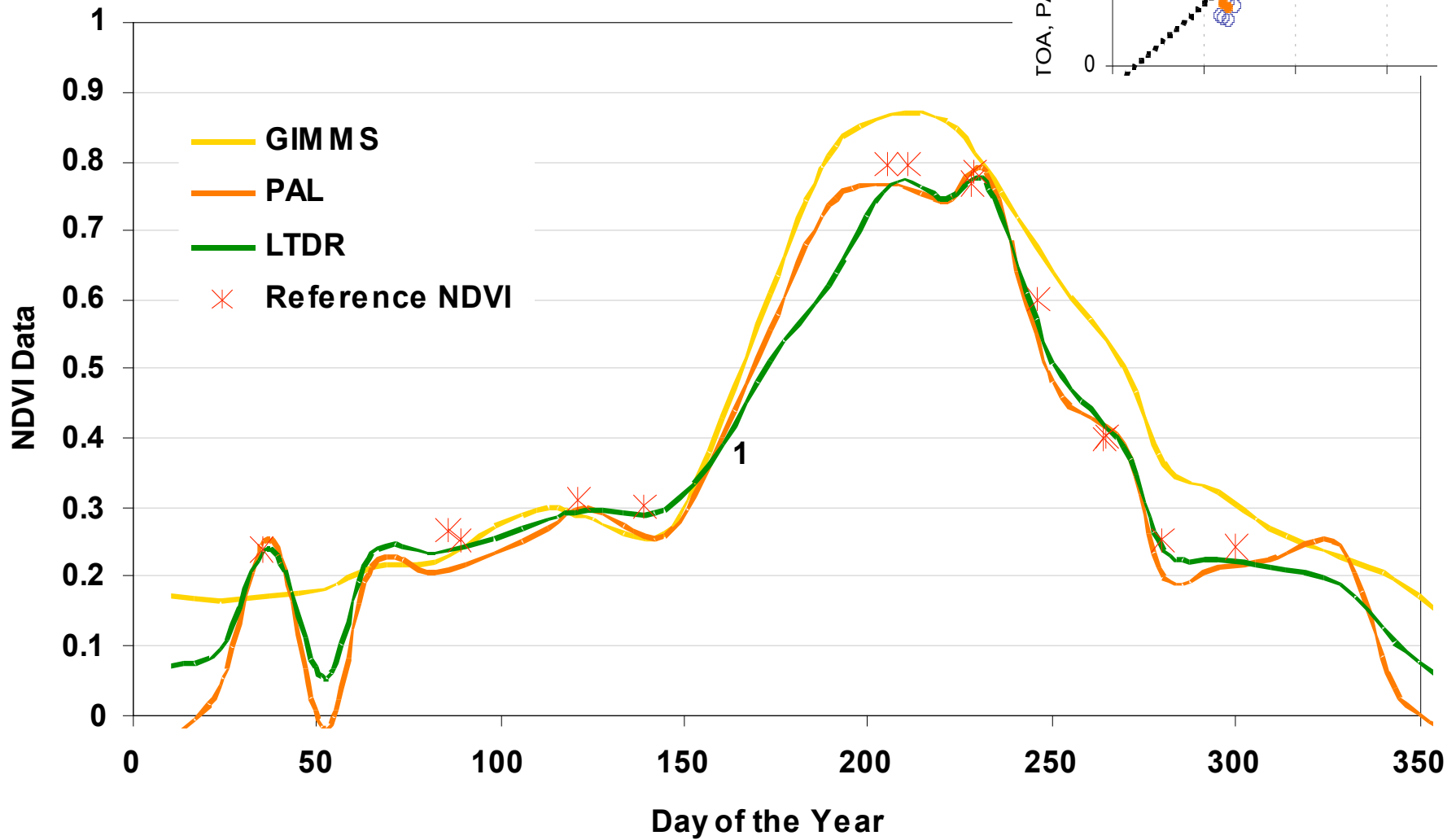
Semiarid Site

Sevilleta, USA



Agricultural Site

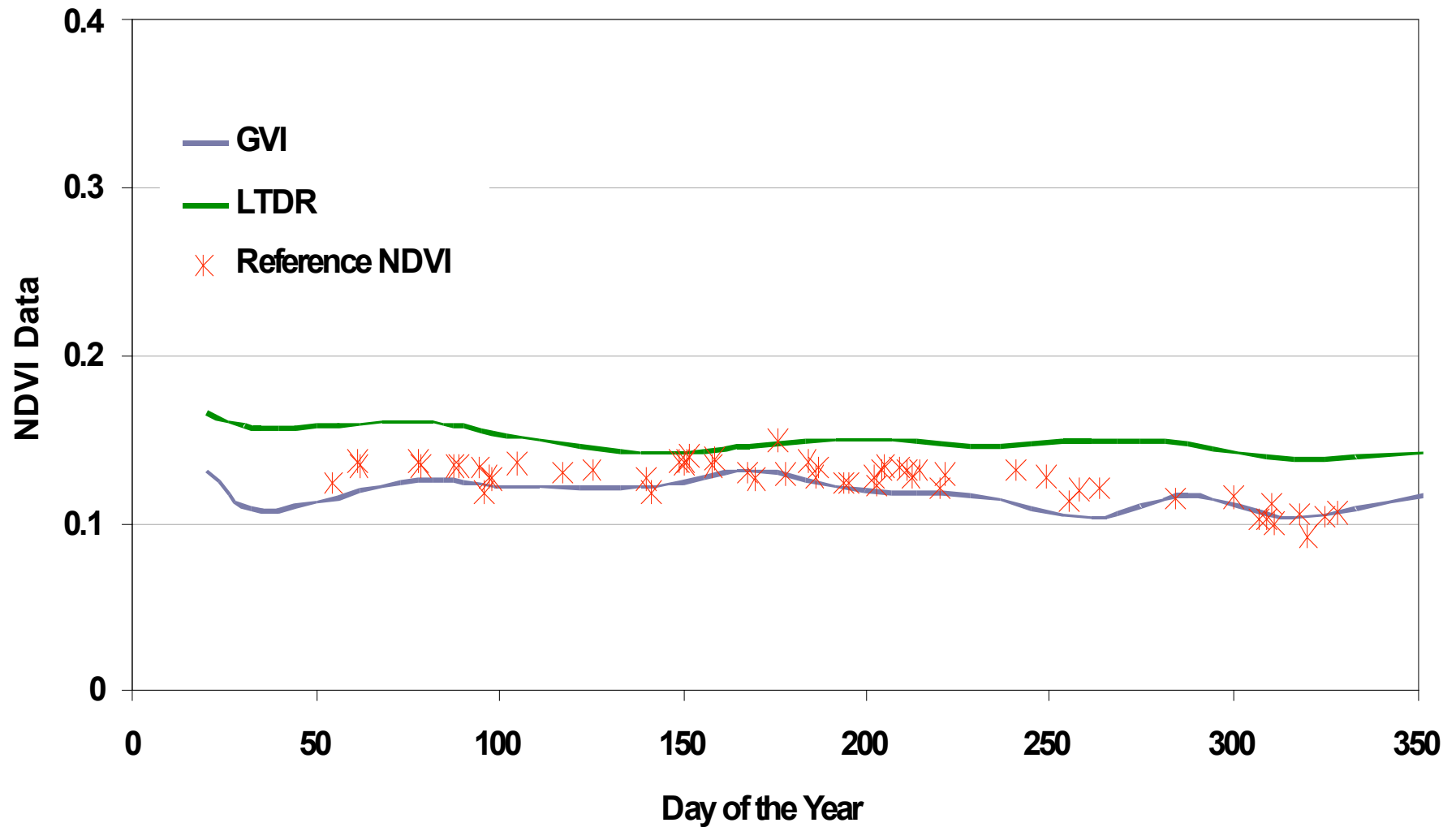
Bondville, USA



Monthly Composite
for
LTDR and GVI

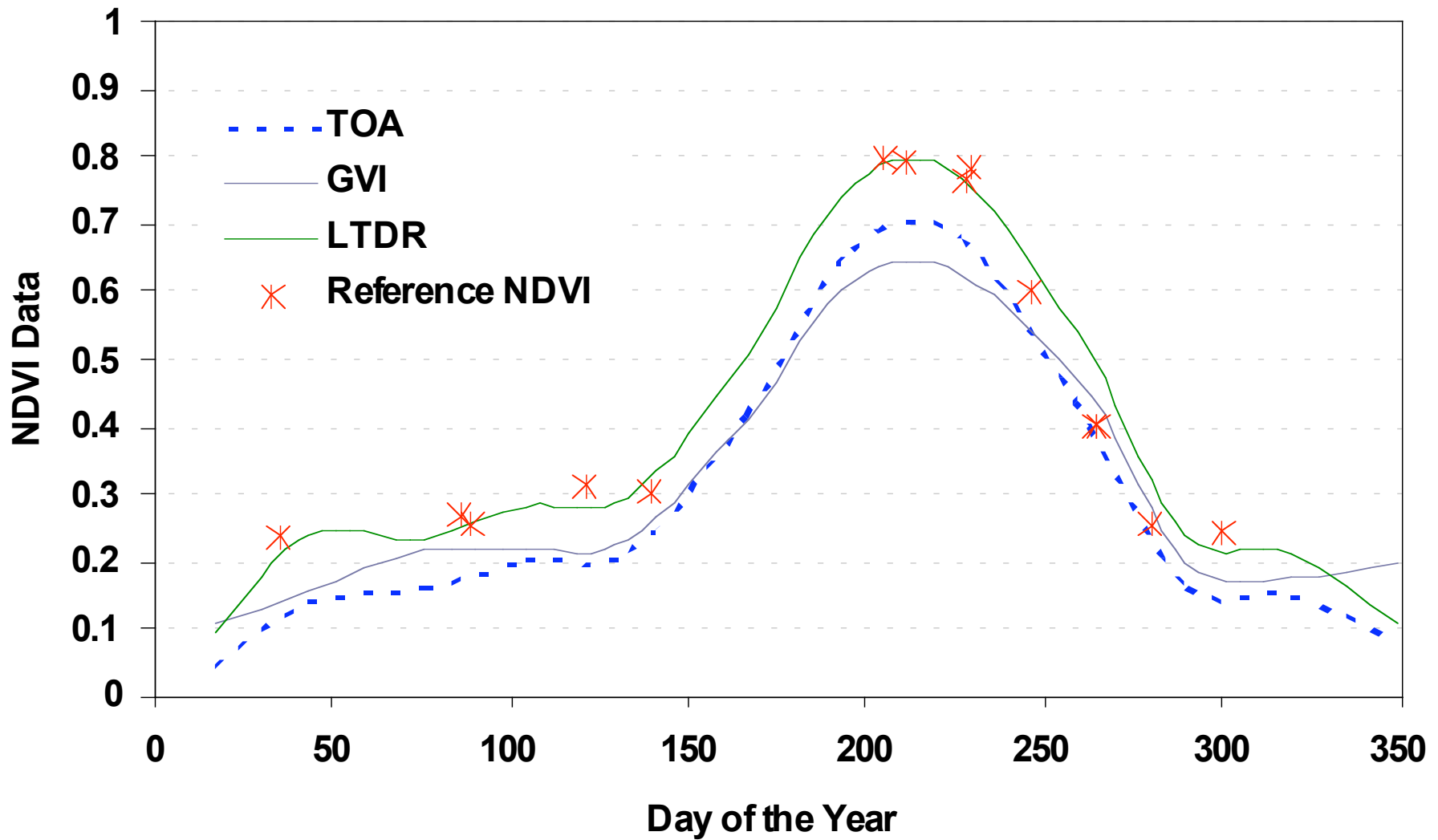
Desert site

Solar village, Saudi Arabia



Agricultural Site

Bondville, USA



Conclusions from Comparison with Reference Data

- ❑ LTDR dataset is closest to reference data
- ❑ PAL underestimates both band1 and band2
- ❑ GIMMS data overestimates in high NDVI and underestimates in low NDVI,
 - Possibly due to use of statistical orbital drift correction.
- ❑ GIMMS shows abnormal flatness in desert sites because it has been normalized to be flat there.
- ❑ GVI reduces the amplitude of phenology
 - Possibly due to use of averaging in compositing system
- ❑ This method of evaluation gives us a chance to isolate atmospheric issues.

Limitations

- ❑ Assumes spherical aerosol model
- ❑ The sample is not representative of all biomes
- ❑ Very few operational AERONET sites in 1999.
- ❑ Only 580 points
 - Few operational AERONET sites,
 - non-operational Instruments (data gaps),
 - Clouds.

Future plans

- ❑ Expand this analysis to other years and include other sensors in LTDR product.

Thank you

Jyothy Nagol