
Supplementary Materials: Validation of AVHRR Land Surface Temperature with MODIS and in situ LST—A TIMELINE Thematic Processor *Remote Sensing* 2021, X, Article No.

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Supplementary Material

Table S1. CCI land cover classes and their corresponding emissivity classes.

CCI Class	CCI Description	Emissivity class	Emissivity description
20	Cropland, irrigated or post flooding	1	Flooded vegetation, crops and grasslands
160	Tree cover, flooded, fresh or brakish water	2	Flooded forest and shrublands
170	Tree cover, flooded, saline water		
180	Shrub or herbaceous cover, flooded fresh/saline/brakish water		
10	Cropland, rainfed	3	Croplands and grasslands
11	Cropland, rainfed, herbaceous cover		
12	Cropland, rainfed, tree or shrub cover		
30	Mosaic cropland (>50%) / natural vegetation (tree, shrub, herbaceous cover) (<50%)		
130	Grassland		
150	Sparse vegetation (tree, shrub, herbaceous cover) (<15%)		
151	Sparse tree (<15%)		
152	Sparse shrub (<15%)		
110	Mosaic herbaceous cover		
153	Sparse herbaceous cover (<15%)		
140	Lichens and mosses	4	Shrublands
120	Shrubland		
121	Evergreen shrubland		
122	Deciduous shrubland		
40	Mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%) / cropland (<50%)		
60	Tree cover, broadleaved, deciduous, closed to open (>15%)	5	Broadleaved/needleleaved deciduous forest
61	Tree cover, broadleaved, deciduous, closed (>40%)		
62	Tree cover, broadleaved, deciduous, open (15-40%)		
80	Tree cover, needleleaved, deciduous, closed to open (>15%)		
90	Tree cover, mixed leaf type (broadleaved and needleleaved)		
82	Tree cover, needleleaved, deciduous, open (15-40%)	6	Broadleaved/needleleaved evergreen forest
50	Tree cover, broadleaved, evergreen, closed to open (>15%)		
70	Tree cover, needleleaved, evergreen, closed to open (>15%)		
71	Tree cover, needleleaved, evergreen, closed (>40%)		
72	Tree cover, needleleaved, evergreen, open (15-40%)		
100	Mosaic tree and shrub (>50%) / herbaceous cover (<50%)	7	Urban area
190	Urban areas		
200	Bare areas		
201	Consolidated bare areas		
202	Unconsolidated bare areas	8	Bare rock
210	Water bodies		
220	Permanent snow and ice	9	Water
		10	Snow and ice

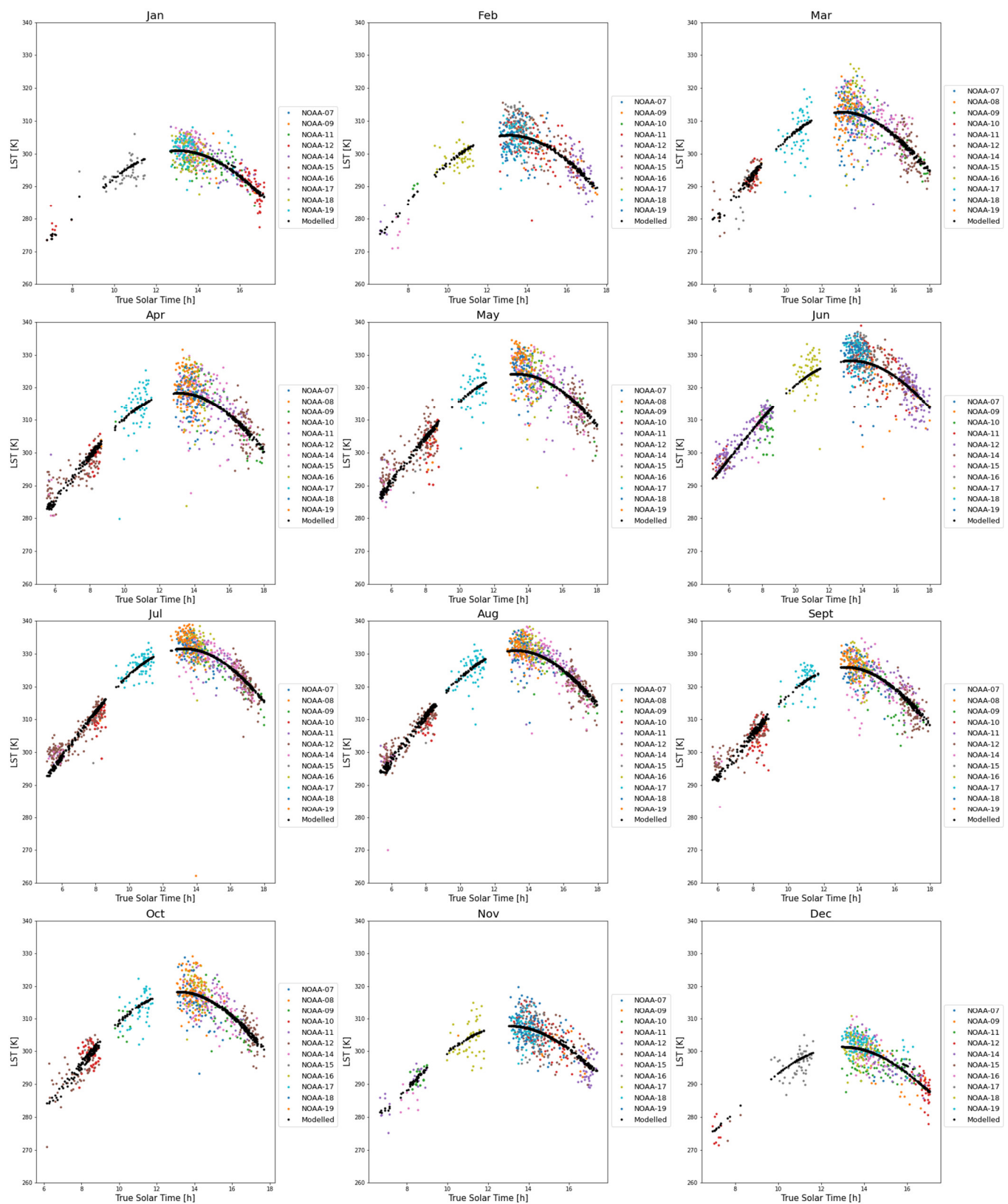


Figure S1. LST at Algeria3 aggregated per month by platform and the resulting DTCs.

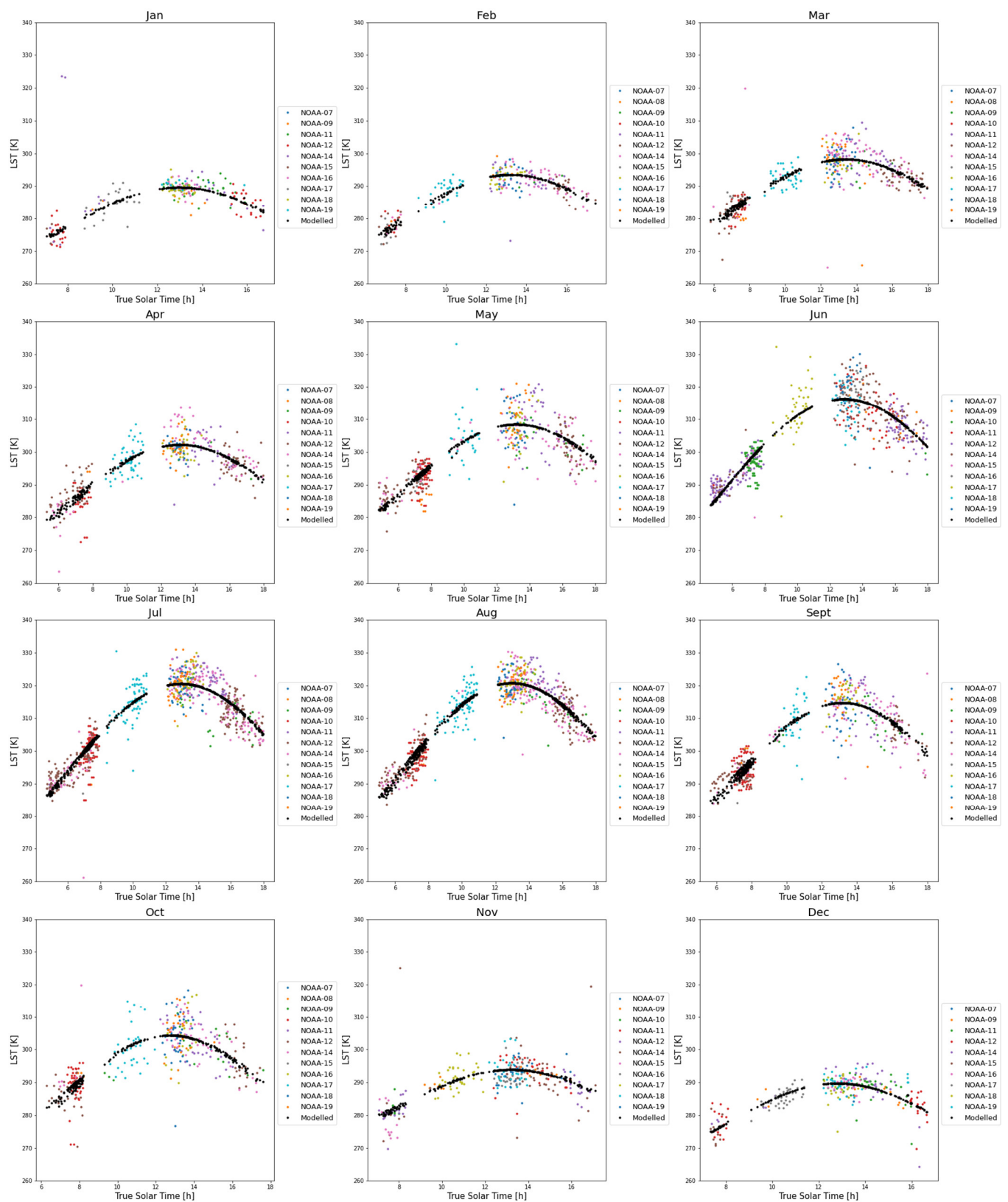


Figure S2. LST at EV aggregated per month by platform and the resulting DTCs.

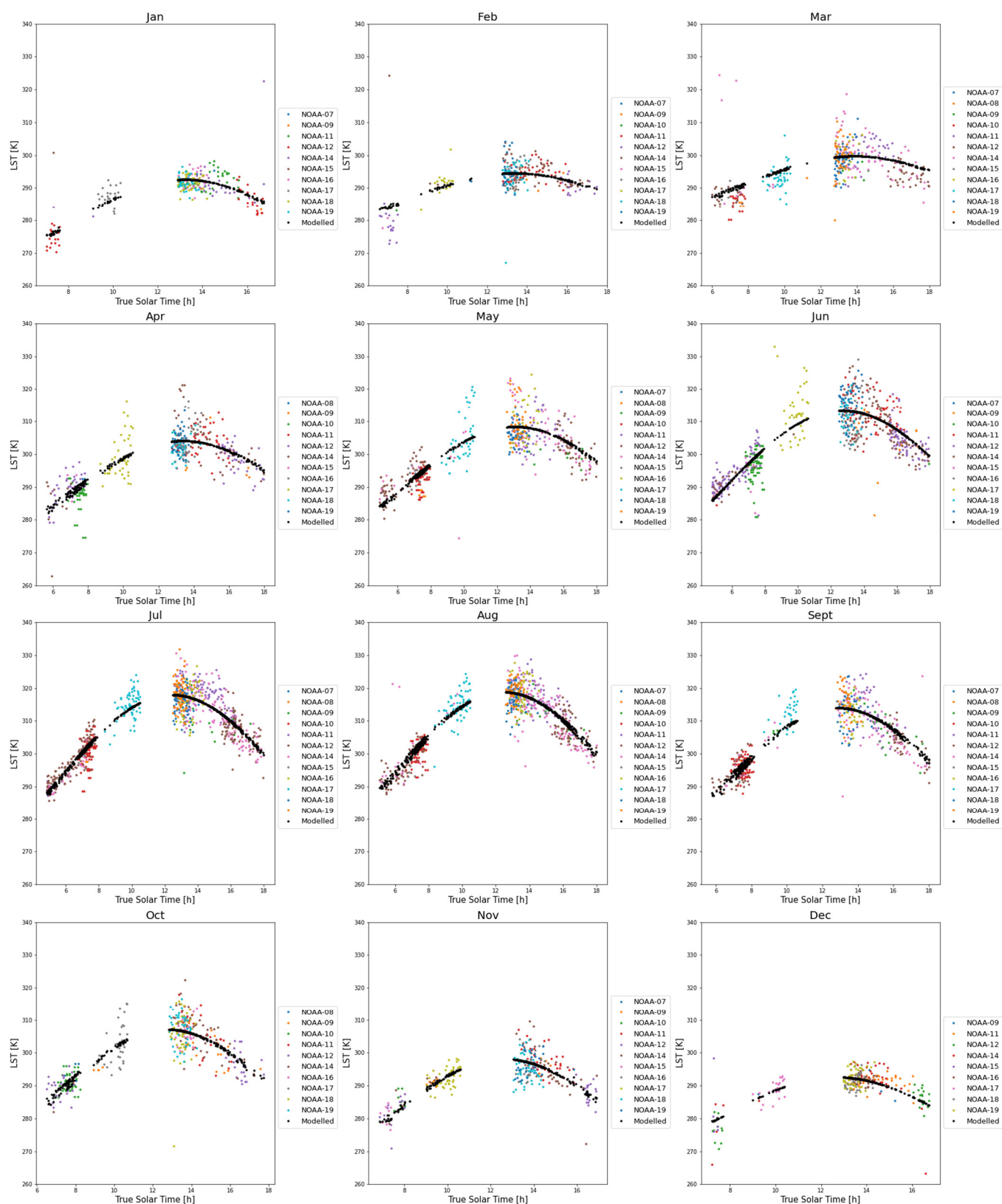


Figure S3. LST at DN aggregated per month by platform and the resulting DTCs.

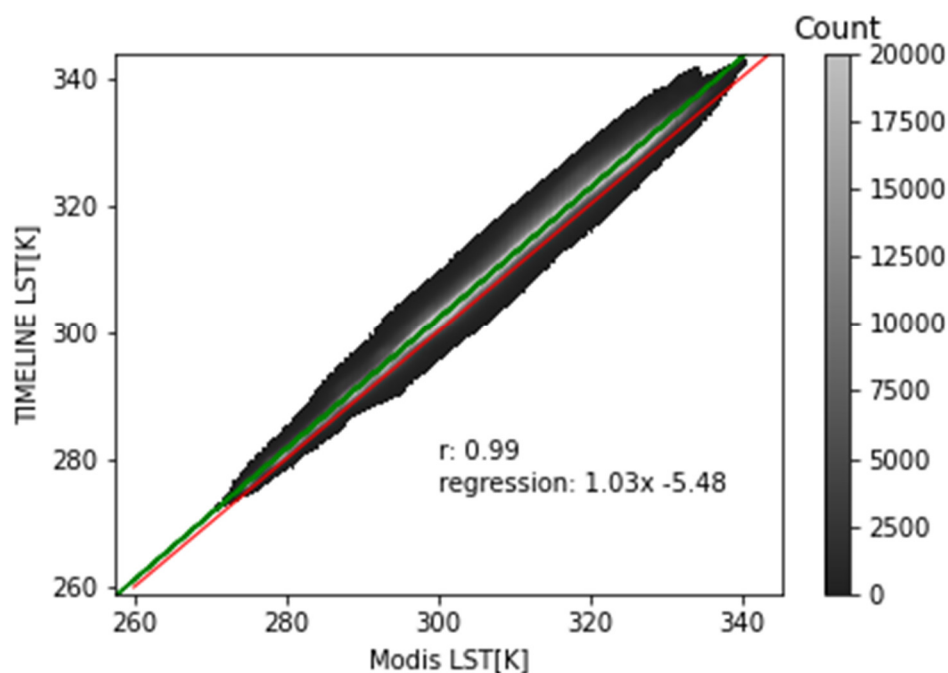


Figure S4. TIMELINE against MODIS LST in 2013 with the 1:1 line (red) and regression line (green).

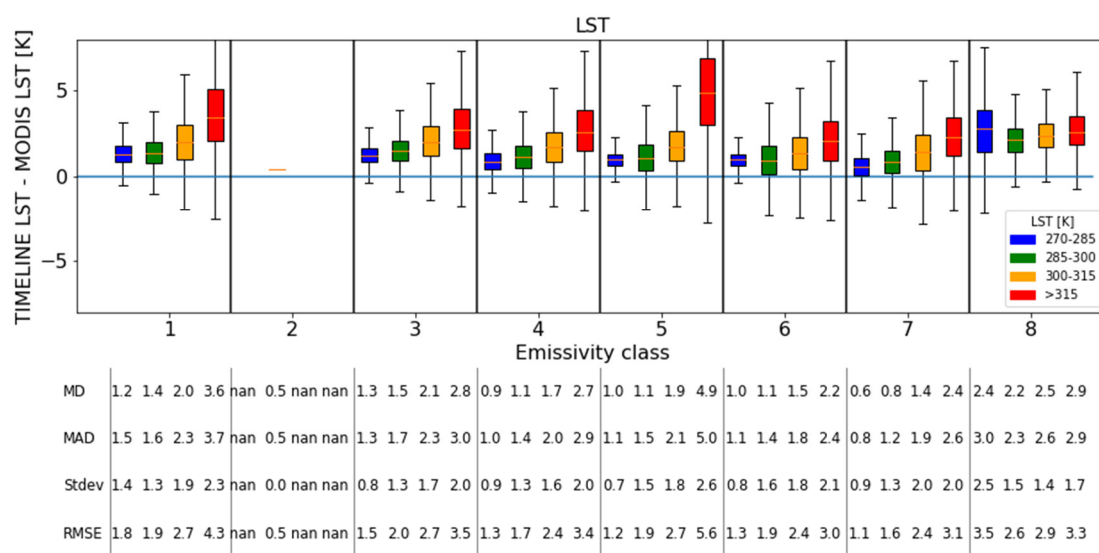


Figure S5. Difference between TIMELINE and MODIS LST classified by LST and the emissivity classes by [57]: (1) Flooded vegetation, crops and grasslands. (2) Flooded forest and shrublands. (3) Croplands and grasslands. (4) Shrublands. (5) Broadleaved/ needleleaved deciduous forest. (6) Broadleaved/ needleleaved evergreen forest. (7) Urban area. (8) Bare rock.

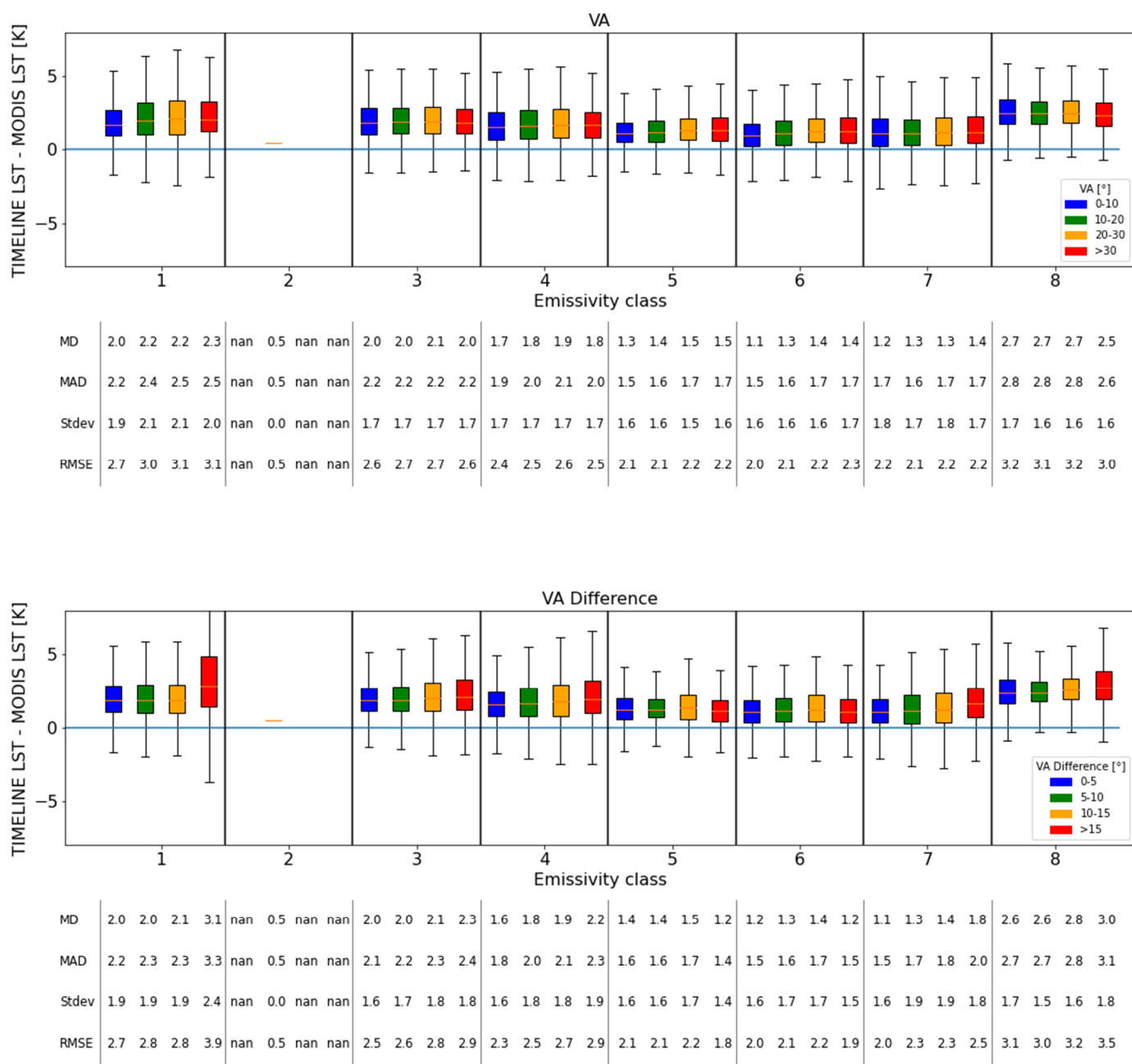


Figure S6. Difference between TIMELINE and MODIS LST classified by VA, absolute VA difference between AVHRR and MODIS, and the emissivity classes devised by [57].

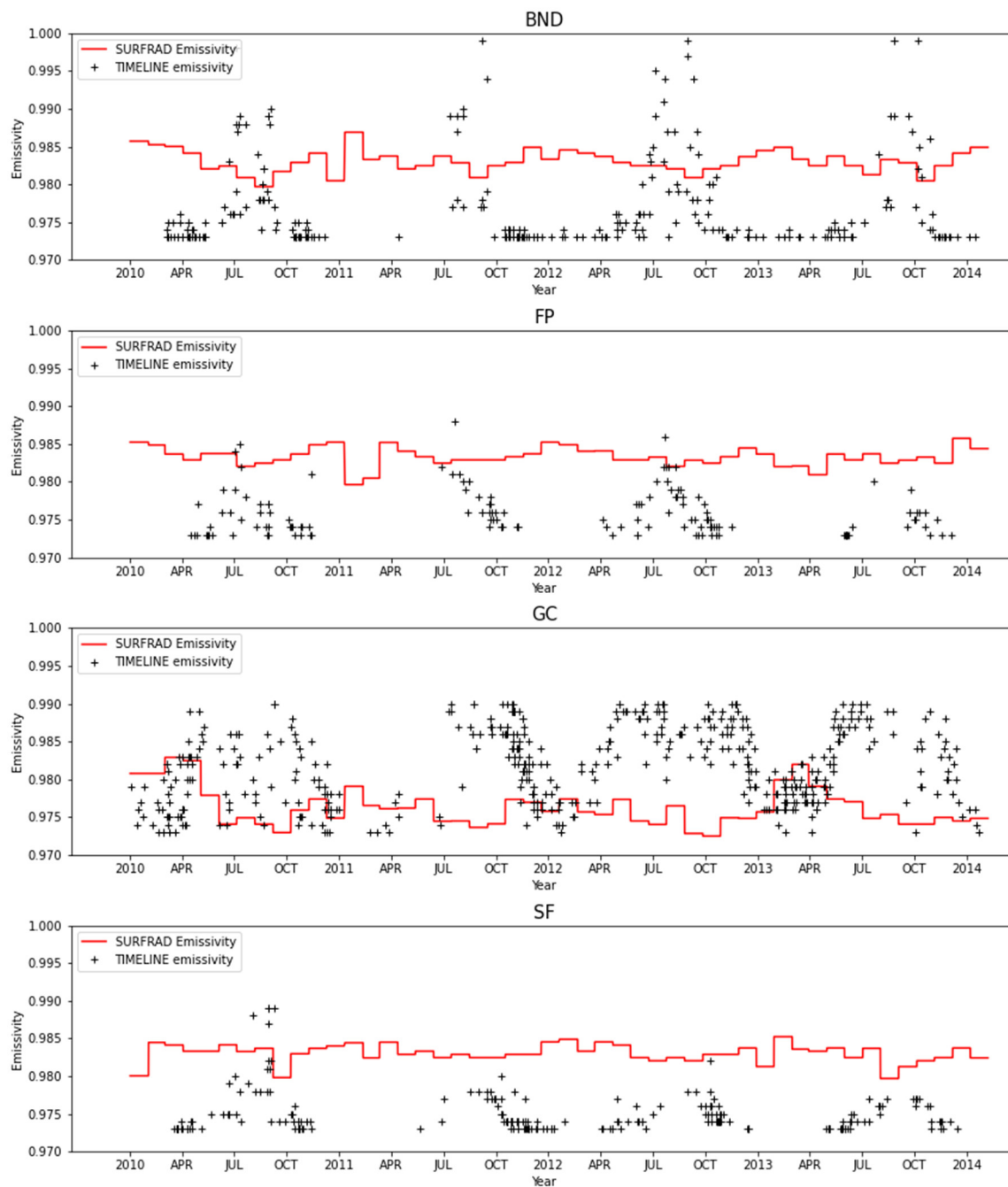


Figure S7. SURFRAD emissivity and TIMELINE emissivity at the vegetated sites BND, FP, GC and SF.

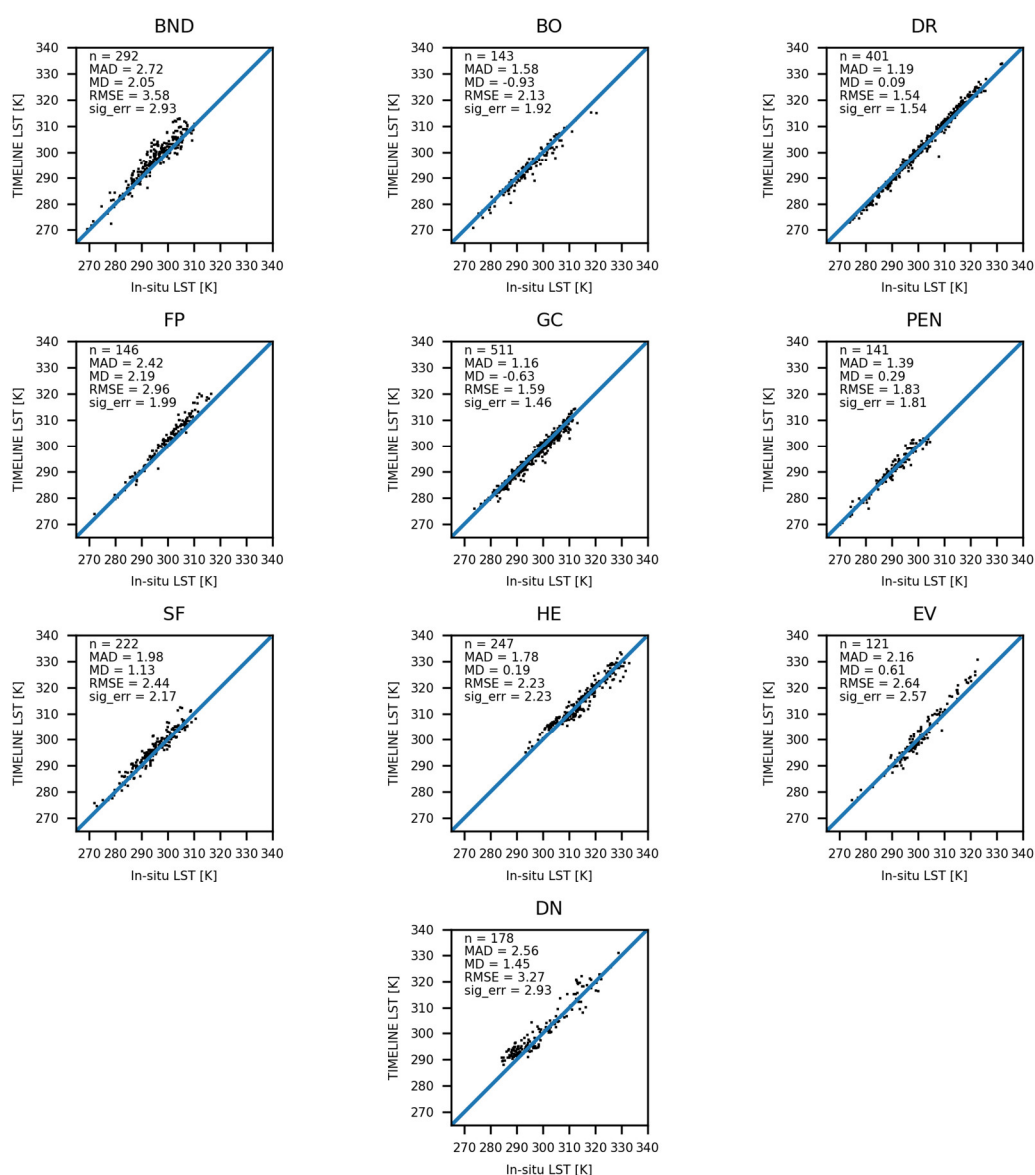


Figure S8. TIMELINE LST against in situ LST at all 10 in situ stations (as Figure 4), but this time in situ LST at the SURDRAD stations was estimated with TIMELINE emissivity.

