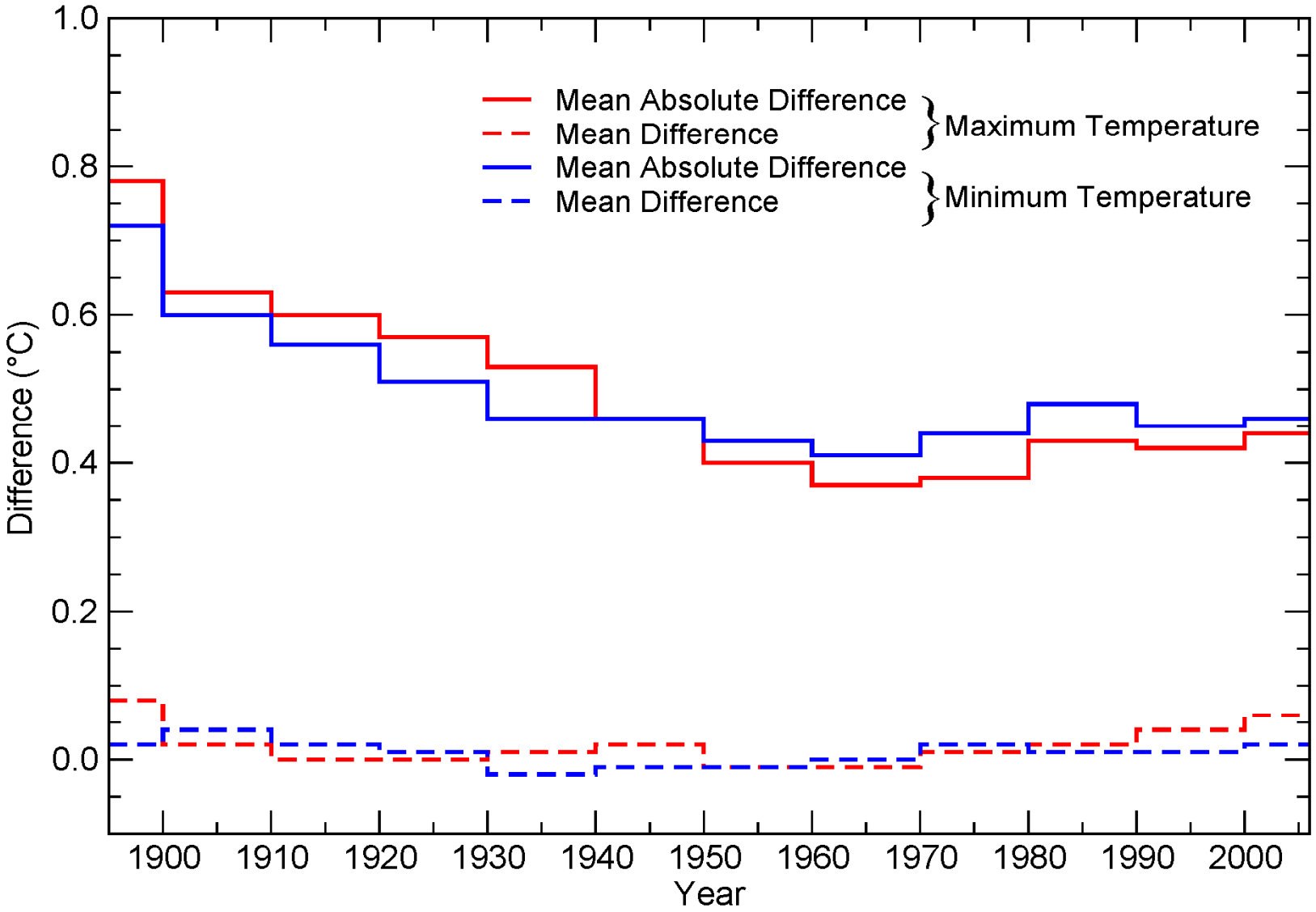
What about FILNET?

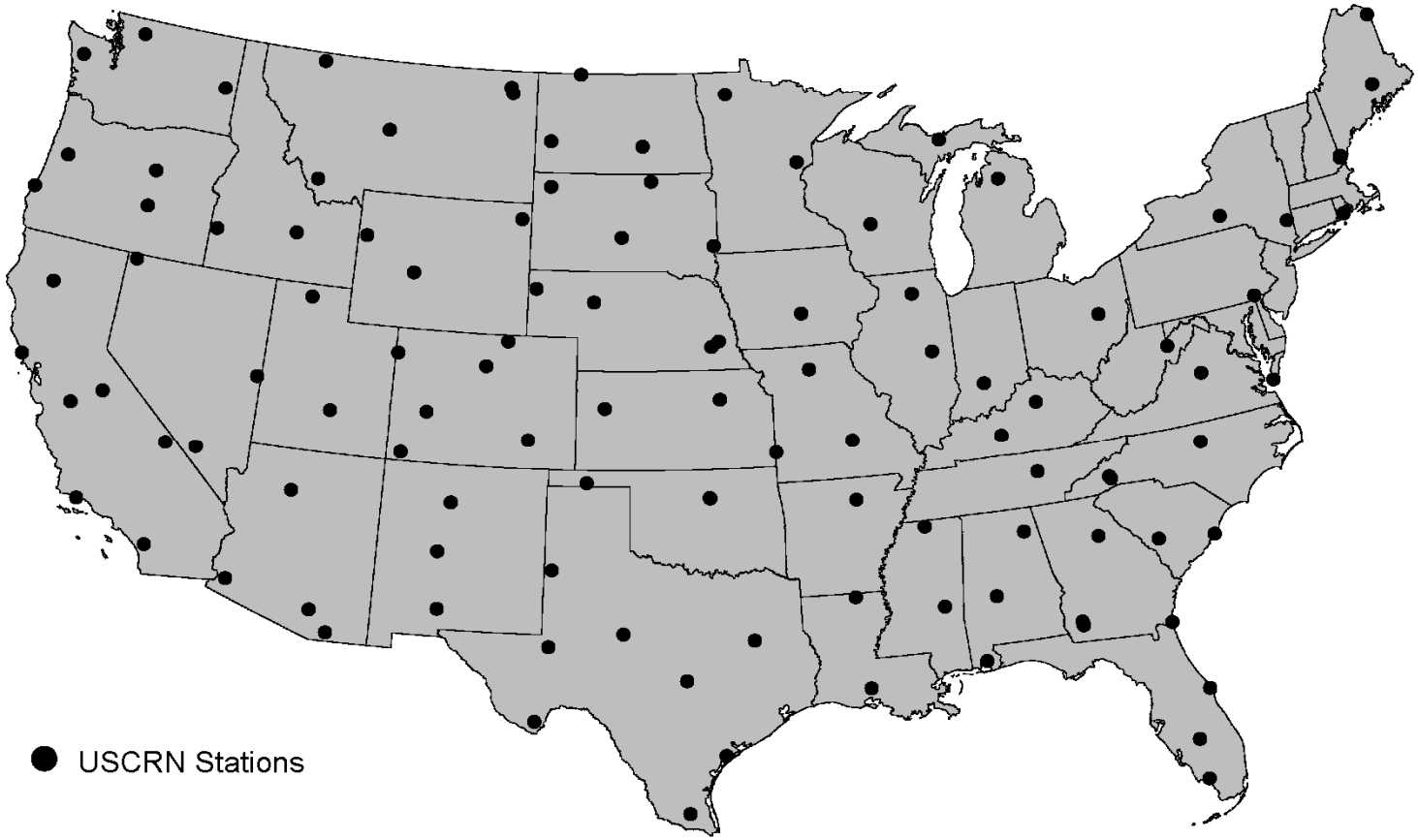
Evaluation of FILNET Error

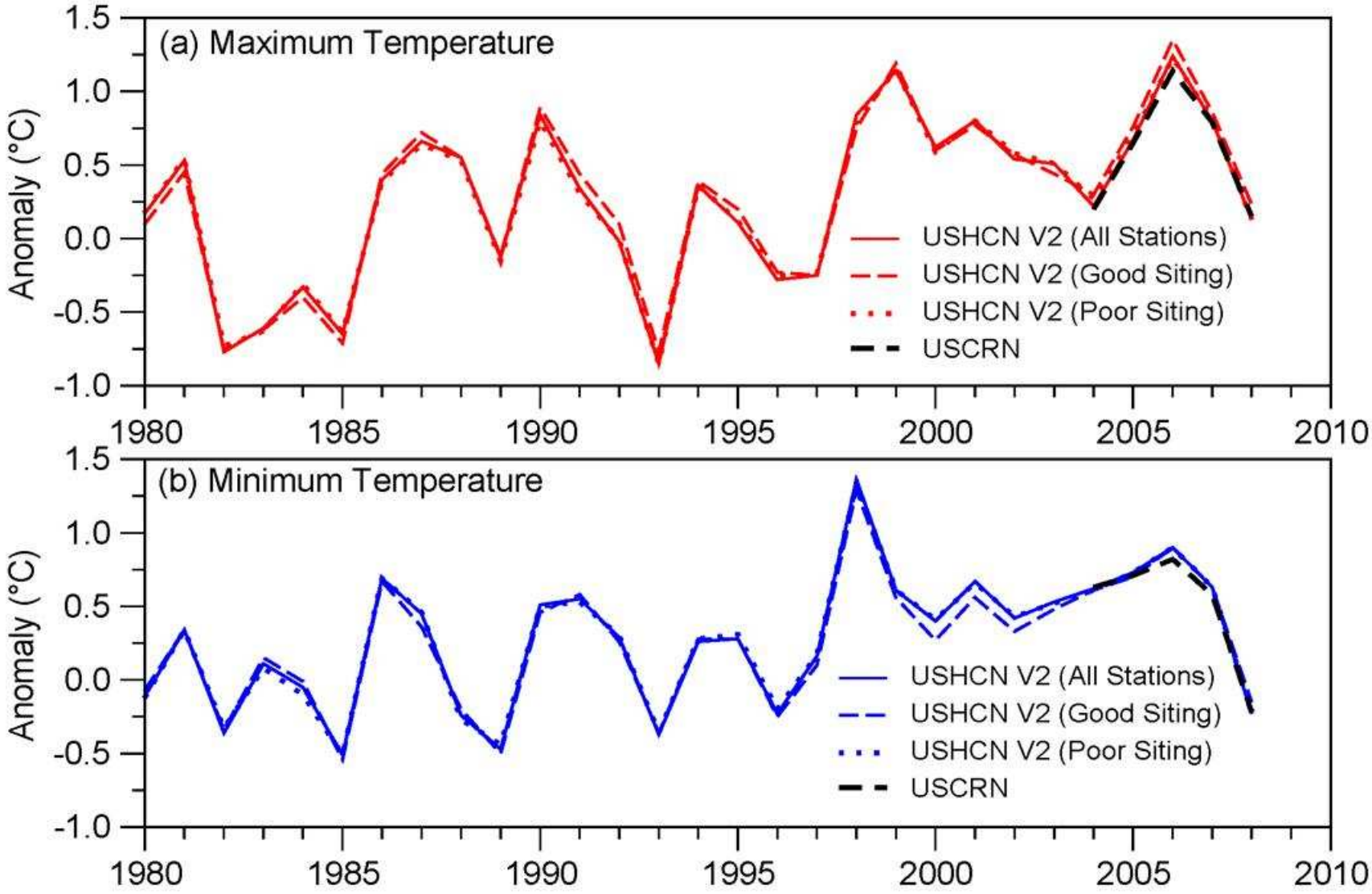


How do temperatures from the USHCN compare to the U.S. Climate Reference Network (USCRN)?

The USCRN

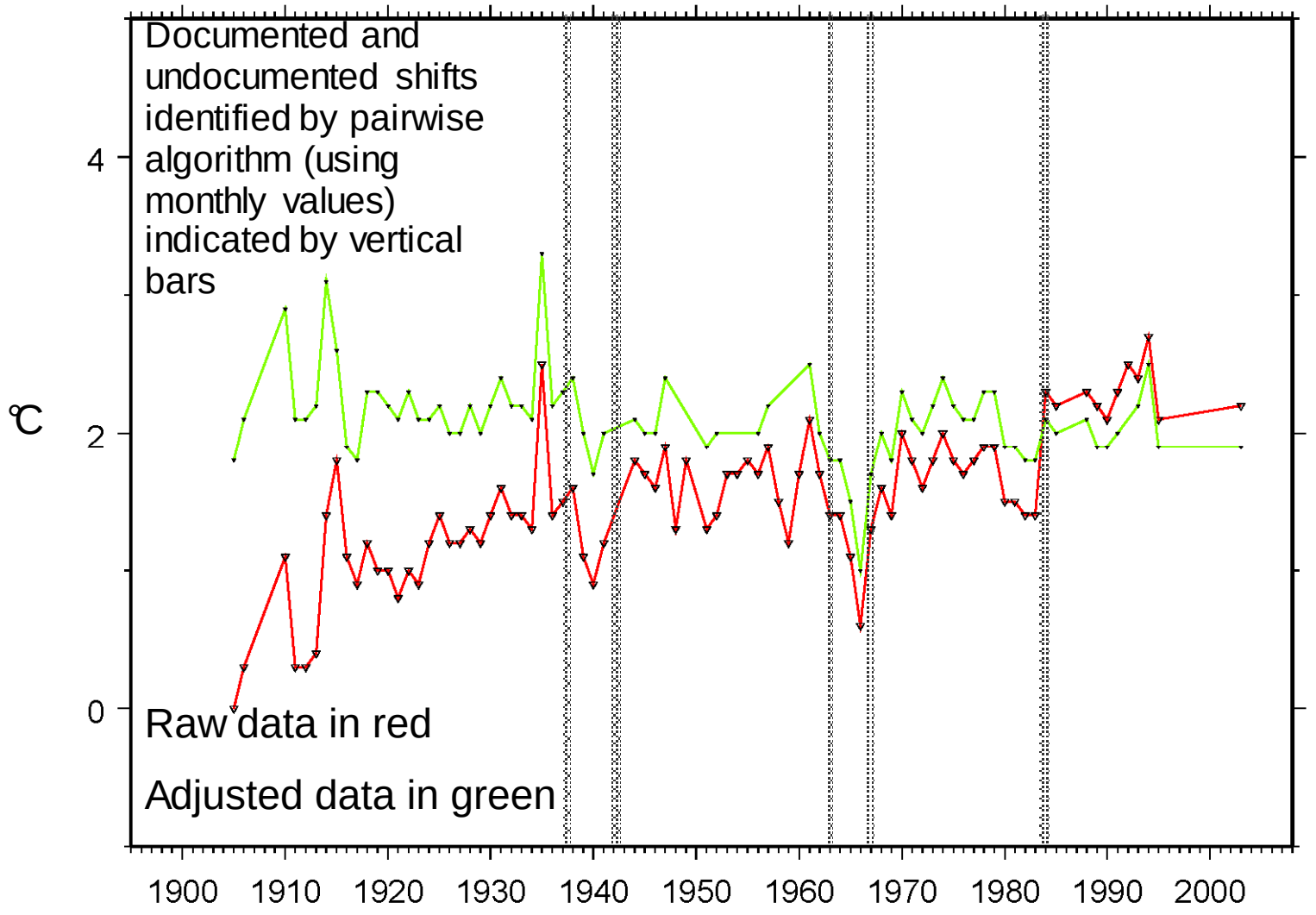
All USCRN stations meet the highest standards for station siting




(a) Maximum Temperature
Anomaly (°C)
1.5
1.0
0.5
0.0
-0.5
-1.0
1980
1985
1990
1995
2000
2005
2010
USHCN V2 (All Stations)
USHCN V2 (Good Siting)
USHCN V2 (Poor Siting)
USCRN
(b) Minimum Temperature
Anomaly (°C)
1.5
1.0
0.5
0.0
-0.5
-1.0
1980
1985
1990
1995
2000
2005
2010
USHCN V2 (All Stations)
USHCN V2 (Good Siting)
USHCN V2 (Poor Siting)
USCRN

Representativeness of Trends and Means

Difference between Annual Minimum Temperature at Marysville, CA and Surrounding Stations



Conclusions

- Unadjusted HCN data indicate that “poor” exposure sites exhibited a drop in mean maximum temperatures and a slight rise in mean minimum temperatures coincident with MMTS installation relative to “good” exposure sites (consistent with *Quayle et al.* 1991; *Hubbard and Lin* 2006; *Menne et al.* 2009)
- After homogenization average CONUS trend for “good” and “poor” exposure sites are in close agreement (and both show high covariance with USCRN mean annual maximum and minimum temperatures averaged over the CONUS (i.e., since 2004).
- There appears to be a residual negative (i.e., “cool”) shift in the U.S. HCN version 2 maximum temperatures caused by the “incomplete” adjustment for transition to the MMTS

Conclusions

- No evidence that the pairwise adjustments are simply transferring a positive bias from the poor exposure sites the good exposure since because essentially all of the bias at the good exposure (and CRS) sites is accounted for in the time of observation bias correction (which is applied independently of the pairwise adjustments and does not require comparisons between station series).
- Photos and site surveys provide a great opportunity to evaluate the impacts of exposure (**many thanks to Anthony Watts and his volunteers**).
- Photos and site surveys do not preclude the need for data analysis (because exposure is only part of the story)

For Further Information Please see:

- Menne, M.J., C.N. Willaims, Jr., and M.A. Palecki, 2010: On the reliability of the U.S. surface temperature record. *J. Geophys. Res.* , doi:10.1029/2009JD013094, in press.

- The USHCN Version 2 Web site: http://www.ncdc.noaa.gov/oa/climate/research/ushcn/

Contact: ncdc.ushcn@noaa.gov