

## NASA SeaDAS package spatial binning software and Pathfinder 5.3 SST

A code error in the NASA SeaDAS package spatial binning software used to create daily PFSST L3C (collated) data and MODISV5 products has been identified. In global maps of Pathfinder V5.2, V5.3 and MODIS V5 high latitude SST's in months near the summer (June) solstice and winter (December) solstice are often incorrect above 50 degrees latitude, due to improper splitting of the mixed night and day granules due to NASA SeaDAS package. This day/night spatial binning problem was corrected in 2015 by NASA in SeaDAS7.2 for MODIS SST data but not for AVHRR SST algorithms.

Pathfinder SST algorithm uses the NASA SeaDAS package and needs improved spatial binning software for the next round of updates. Given that evidence of climate changes is happening most rapidly in these latitudes it is important that the user is aware of the possible erroneous SST values in the PF products above 50 degrees latitude. This problem does not affect the L2P (processed data) and L3U (uncollated data), which are also made available to users for PFSST 5.3.

Figure1. Mean difference of Pathfinder 5.2 SST and OISST (upper panel) and mean difference of Pathfinder 5.3 SST and OISST (lower panel). One signature of the day/night spatial binning problem is the lack of gaps in SSTs at high northern latitudes over time, resulting in a continuous distribution pattern of SST values at high latitudes over time.



