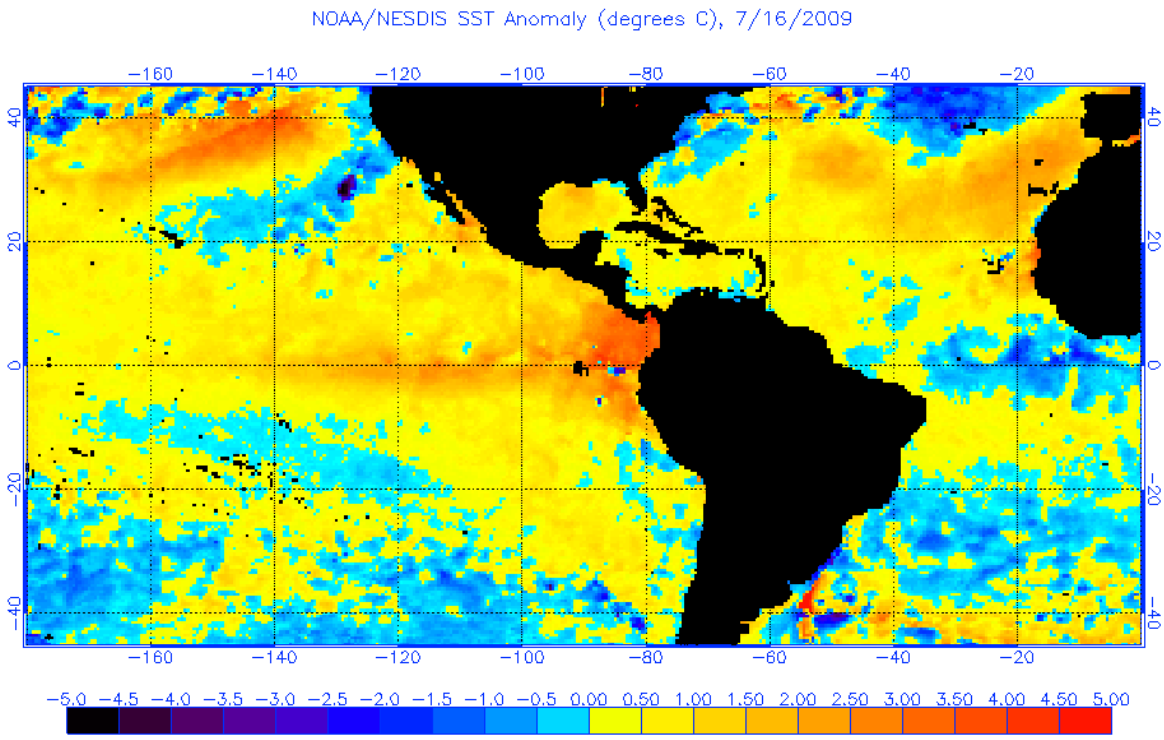
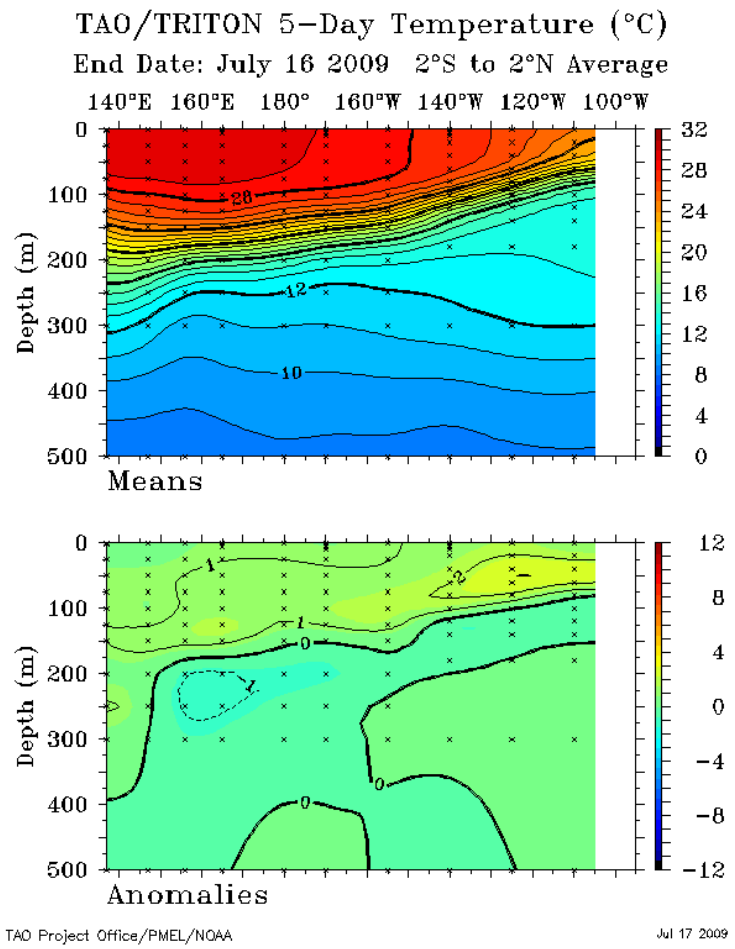
EL NINO NOW OFFICIAL – NOW WHAT
By Joseph D'Aleo

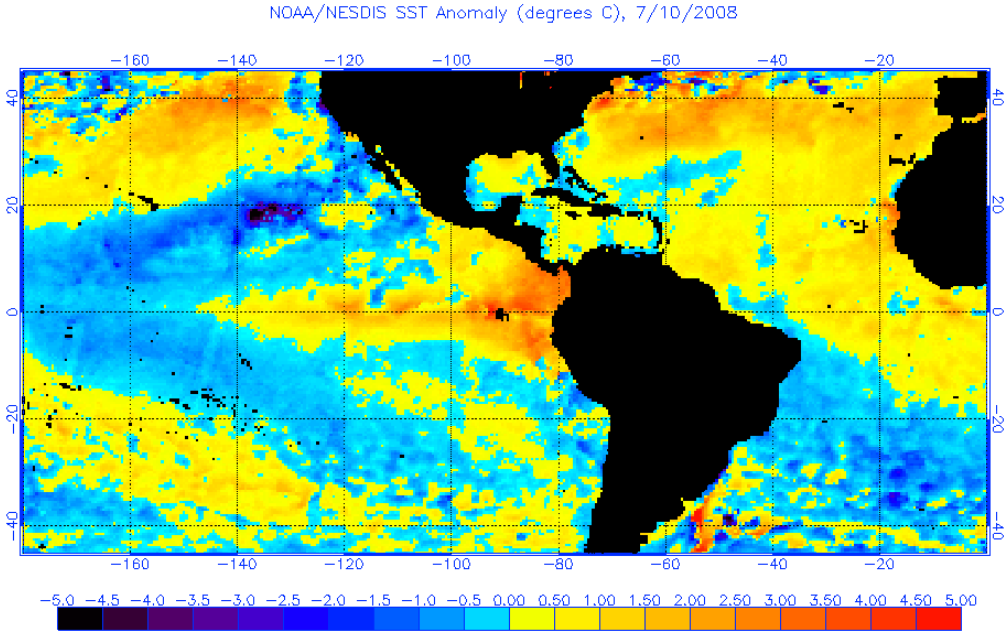
El Nino criteria has been met. Now the meteorological world looks to see how strong and how long this lasts. Count on CPC and other forecast centers to go for a warm winter as a result of El Nino but as we have shown, there are differences in El Ninos depending on the overall mode in the Pacific Basin (the PDO).



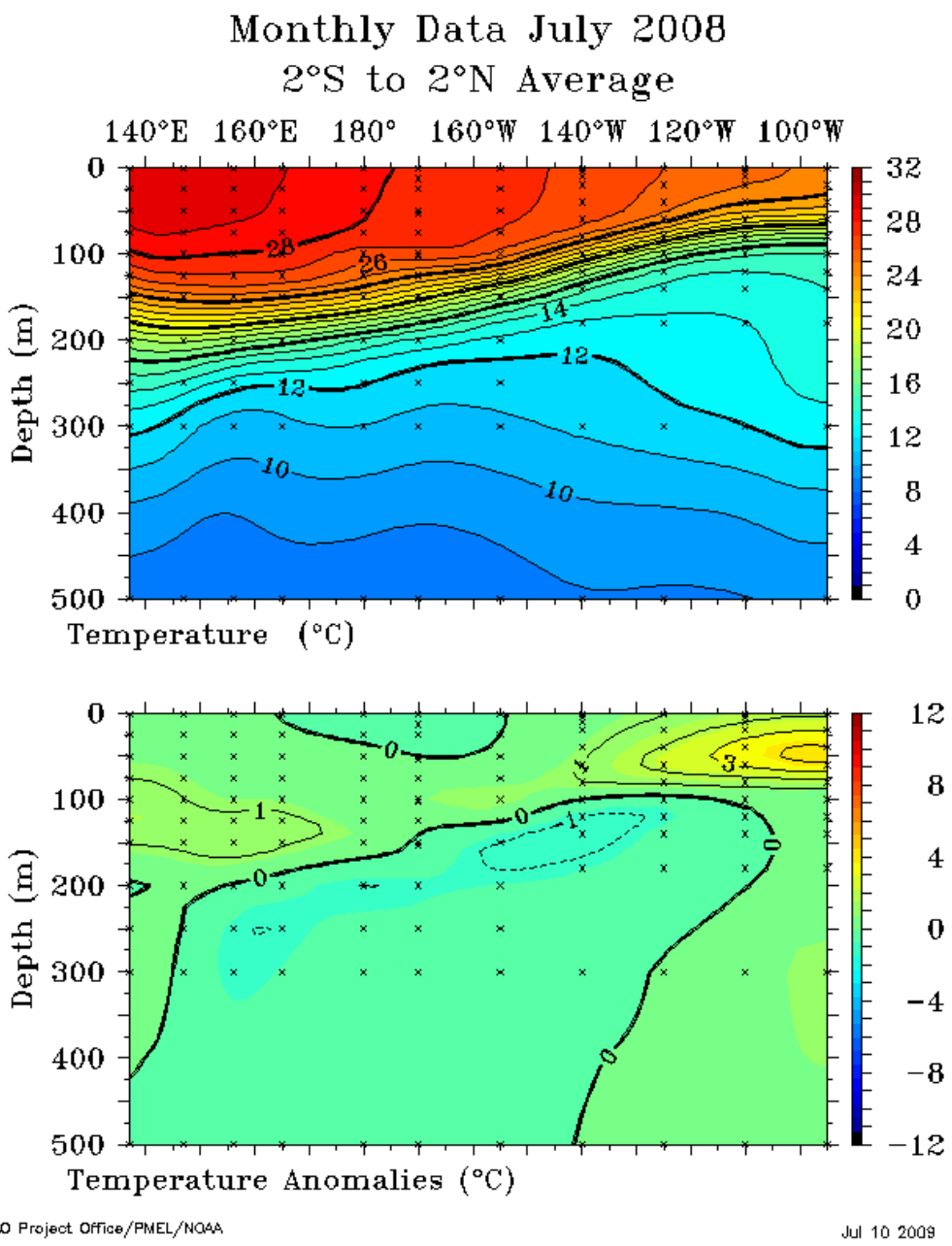
You can see the warm plume along the tropical easterly belt along the equator. The cross section shows the pool of warm water that has suppressed the thermocline in the eastern Pacific.



The oceans tried this last year in the early summer, but the warmth stayed in the eastern Pacific.

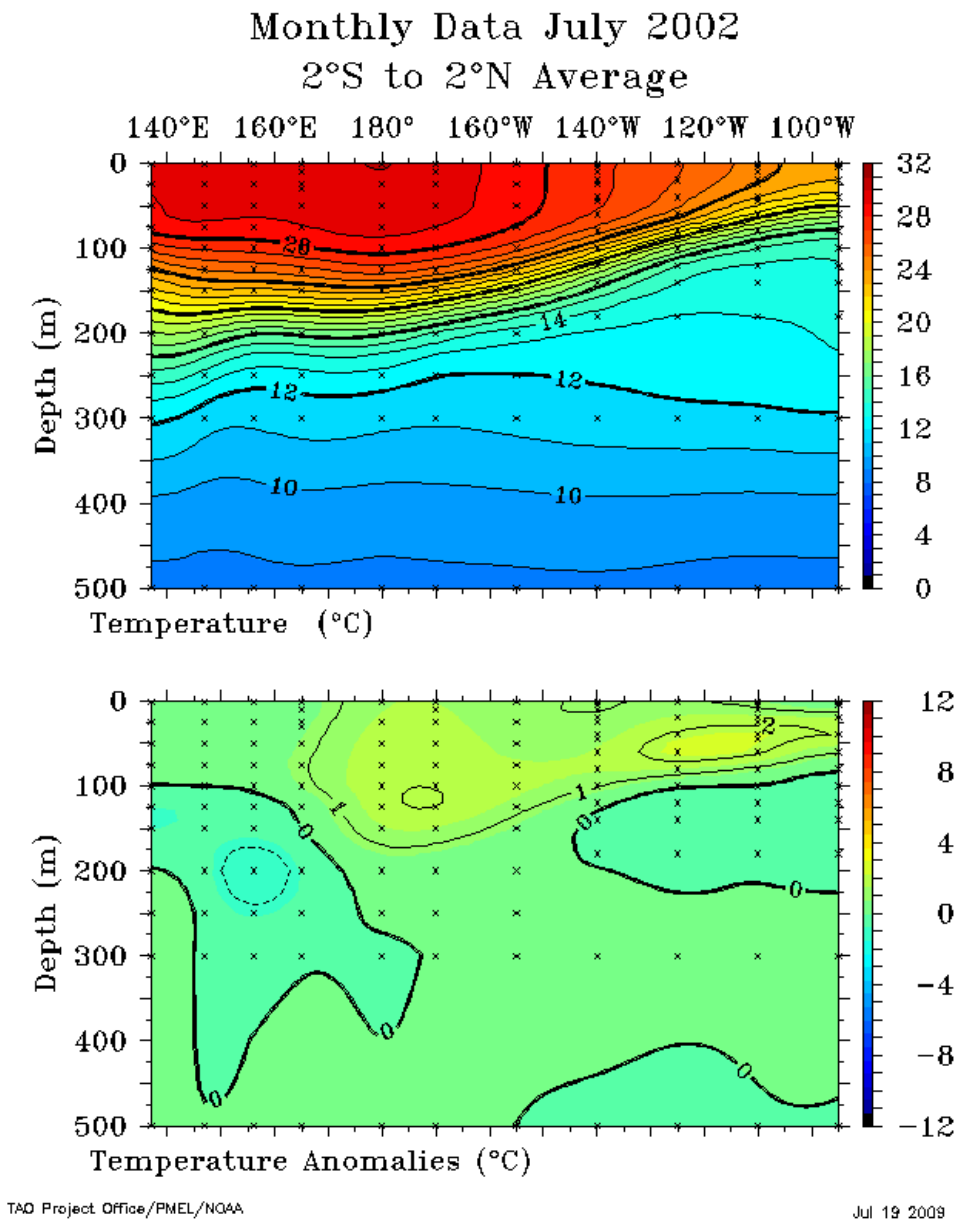


The cross section looked similar last July to the one this last week although it was a little colder in the central Pacific near the surface and beneath the thermoocline.



See an animation of the ocean temperatures over the last years as the feeble El Nino attempt failed, La Nina returned and then El Nino developed here.

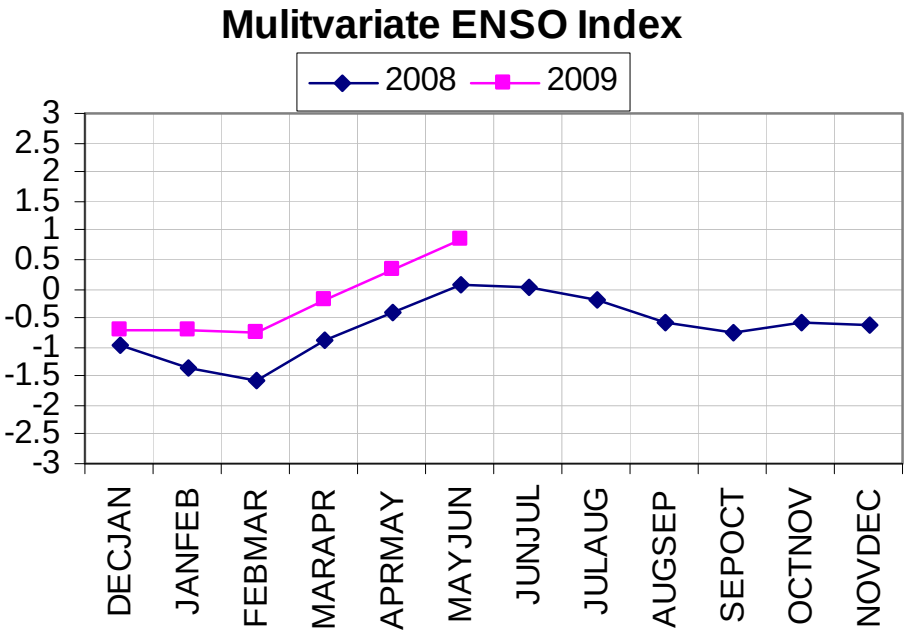
The El Nino of 2002/03 was another similar year.



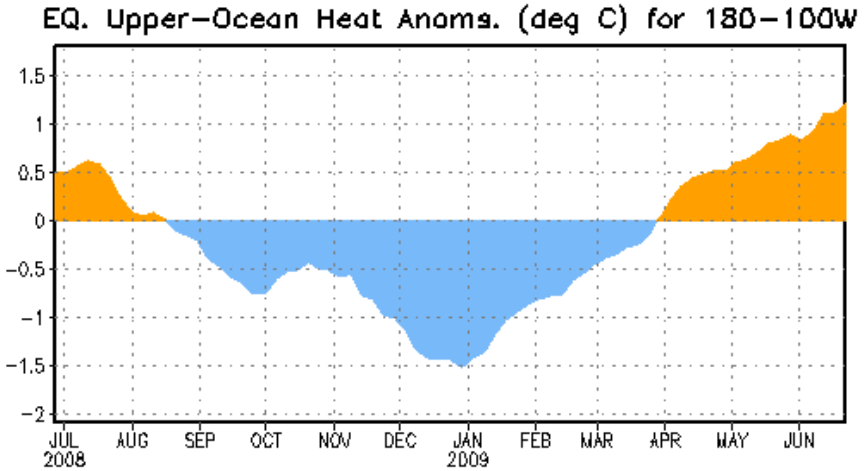
Compare with the super 1997/98 event in July.

What's Different

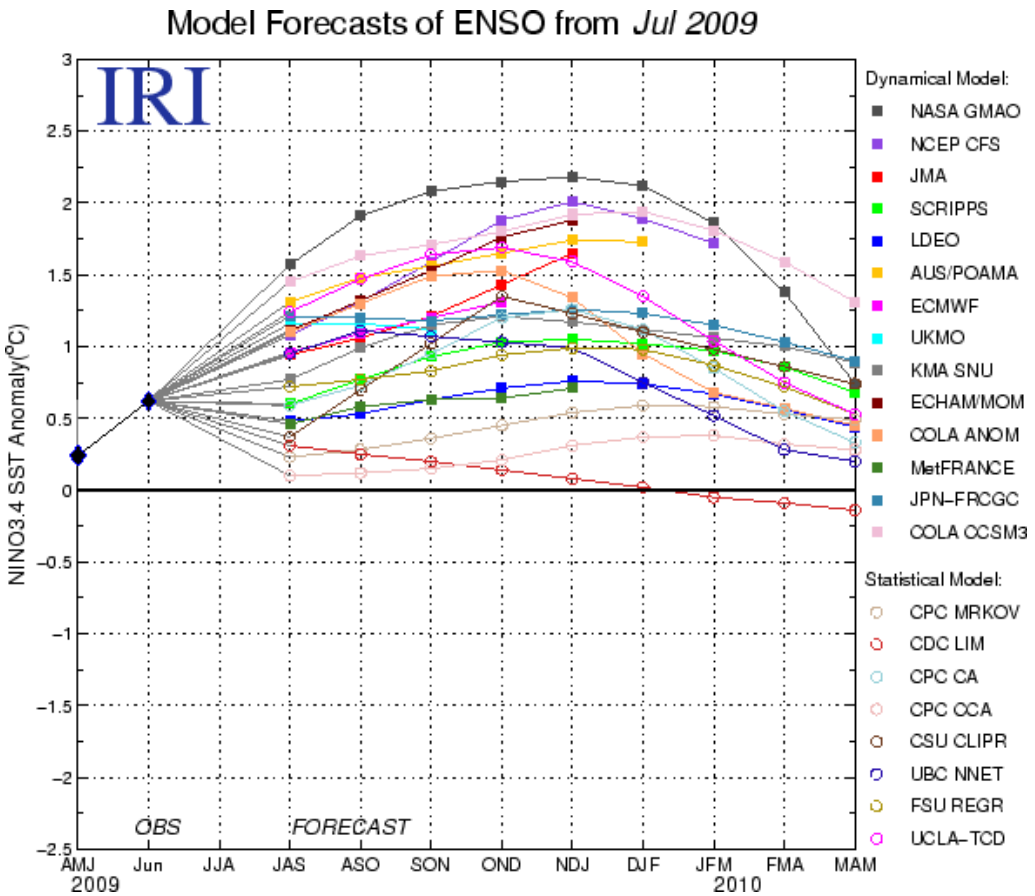
The CDC's Multivariate ENSO Index shows this year's warming is stronger than last year but tracking along a similar path.



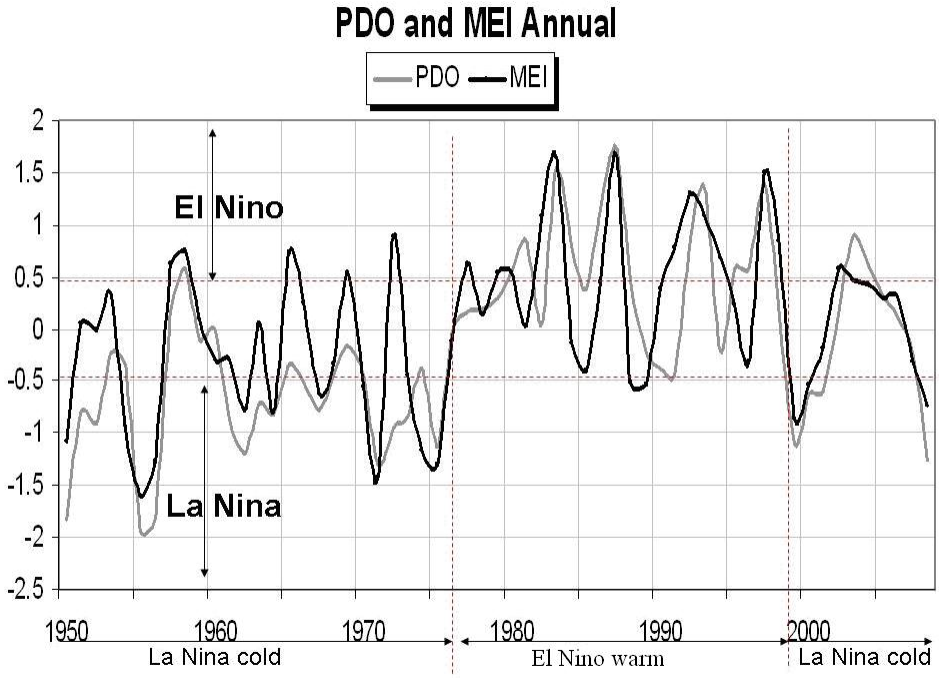
The ocean heat content east of the dateline in the tropical Pacific is also greater this year. However sub surface anomalies have diminished the last few weeks and the heat content here shown through half of June. The Southern Oscillation Index has been positive (La Nina territory) much of the last month. Is it possible like last year, the warming fails to persist?



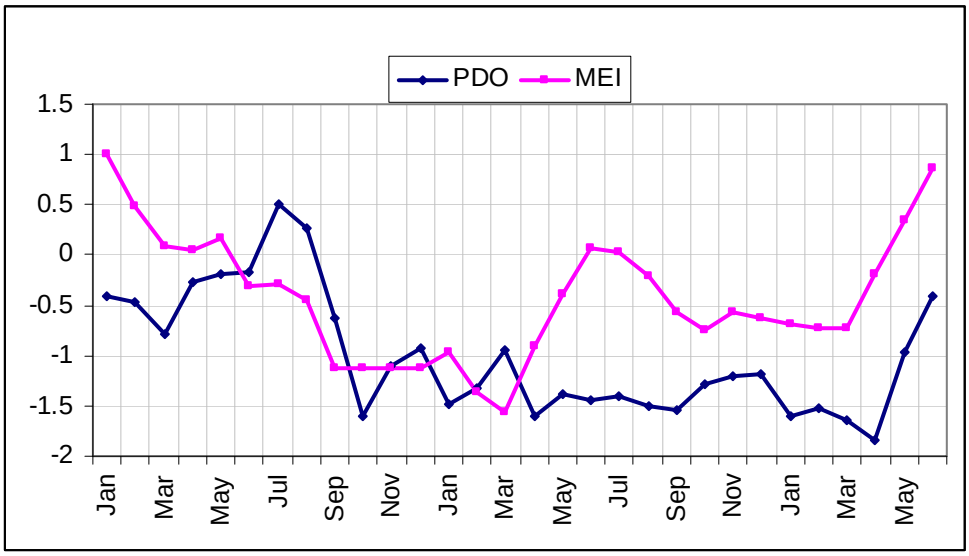
The ENSO models see this as a stronger event but with some hints it may peak before winter.



The PDO last year stayed quite strongly negative helping to return the La Nina. The MEI and PDO track well with each other.



The PDO has turned less negative as the ENSO Index turned positive. In many EL Ninos in the cold PDO of the 1970-1970s, the PDO turned slightly positive for a few months.

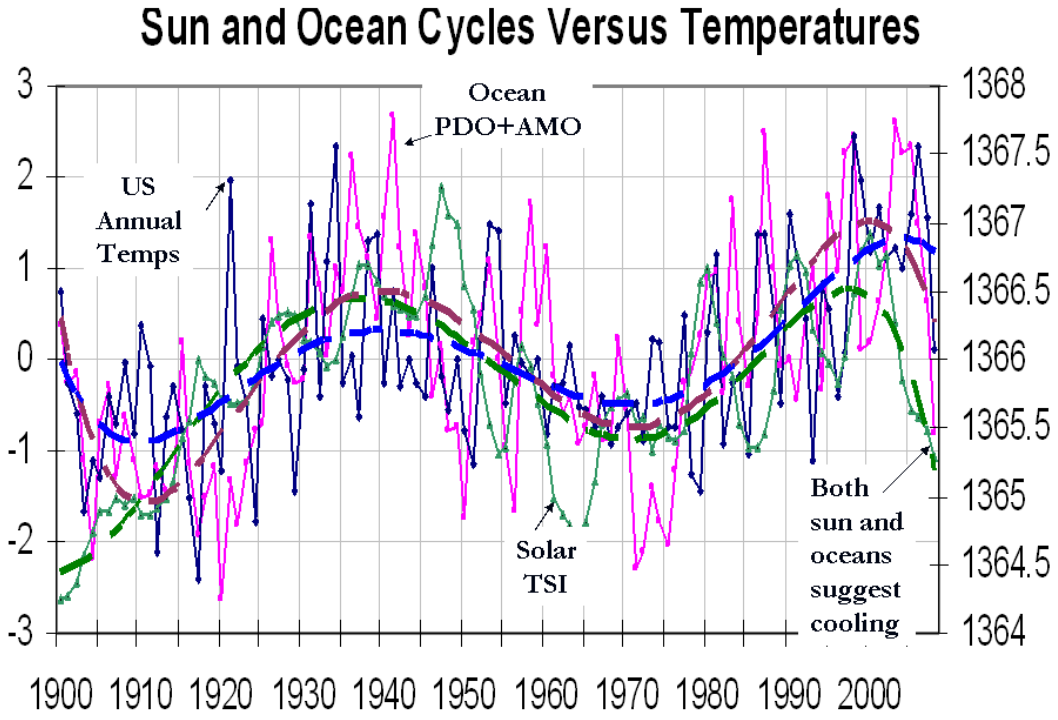


This year, the PDO is tracking up with the MEI. In some other El Ninos in cold PDO modes, the PDO went to neutral or slightly positive for a few months before returning negative. What it does in the next few months will have a lot to say how far this El Nino goes and how quickly it ends. Stay tuned!

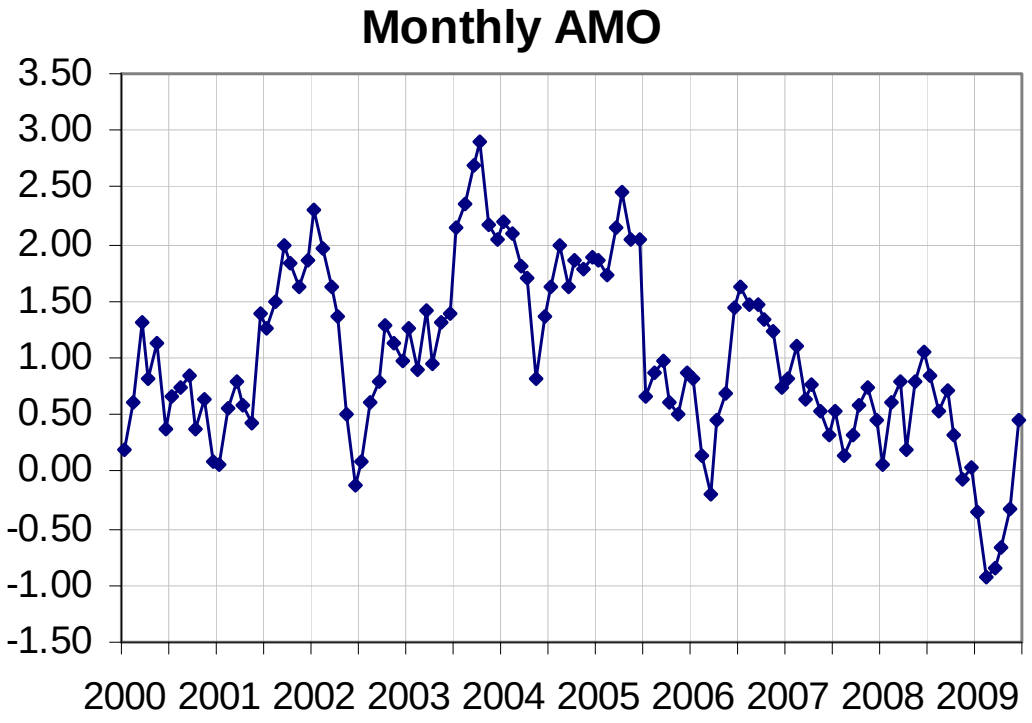
Effects on Global Temperatures

El Ninos in negative PDO eras tend to be shorter, weaker and colder (USHCN GISS version -0.12F) compared to El Ninos in a positive PDO era (+1.08F). Some of that is the data contamination (siting) issue which is greater in the recent +PDO era 1979-1998 than in the prior cold PDO 1950-1978.

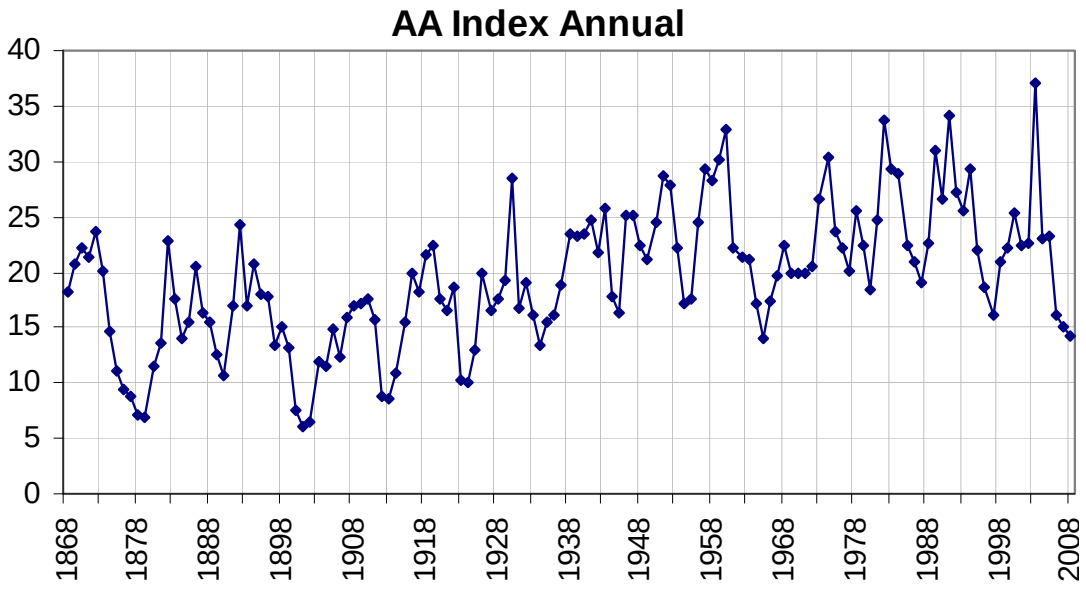
We have shown a strong correlation with the solar and ocean cycles and the USHCN. The cycles suggest similarities to the 1960s now.



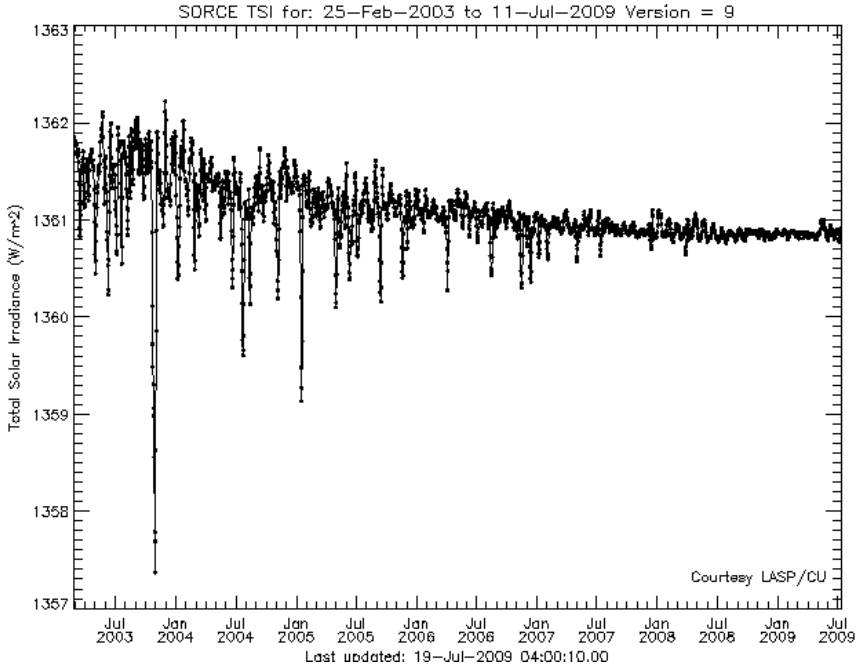
The Atlantic Multidecadal Oscillation too has turned back warmer than normal by a small amount after 7 negative months (standardized CDC AMO units).



Given the correlation of temperature with PDO+AMO, we should see even MSU temperatures pop some in the next few months. Solar continues quite quiet. The geomagnetic index favored by Landscheidt is lower than anytime except briefly the mid 1960s, the early 1900s.



Total solar irradiance also remains very low



The pop of the AMO and PDO as El Nino comes on suggests some bounce in even the MSU UAH and RSS data sets for several months. History suggests the warming will not be as dramatic as recent El Ninos if indeed the PDO is in the cold mode.

An El Nino like 1963/64, 1965/66, 1976/77, 1986/87 (those near the solar minima) appears most likely.