JMA's El Niño Outlook for the 2006/07 Winter

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2006/11/02 7th Joint Meeting on EAWM

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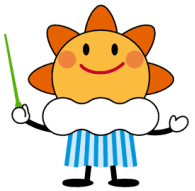
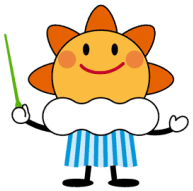


1. JMA's El Niño Monitoring and Outlook for 2006/07 winter

< URL: http://okdk.kishou.go.jp/products/elnino/index.html >

issued on 11 October 2006

Summary (ENSO)



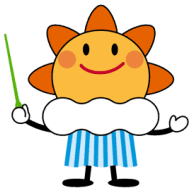
Current Status of Equatorial Pacific

- SSTs were above normal in much of the equatorial Pacific and the positive anomalies are prominent especially in the central and eastern parts. Positive subsurface temperature anomalies were found from the central to eastern equatorial Pacific.

Outlook of El Niño

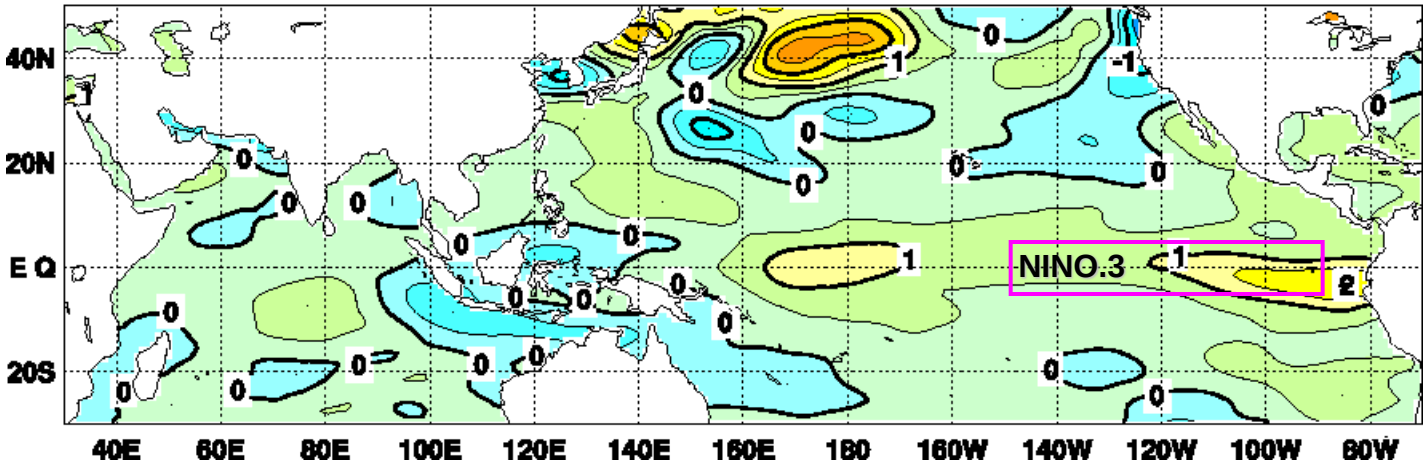
- The NINO.3 SST will continue to be above normal through the coming autumn to winter, and then, decrease and become near normal in the late winter to spring 2007. At present, it is less likely that El Niño event will develop in the prediction period. However, there is some possibility that the warm SST condition would persist through the winter to be an El Niño event.

Equatorial SST Anomalies and SOI



September 2006

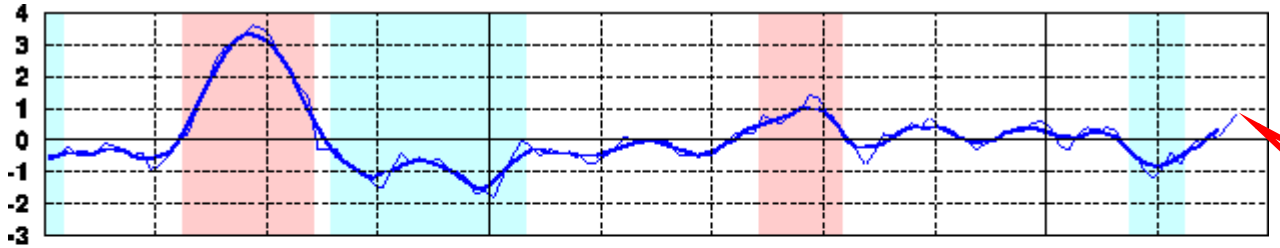
SST anomalies



SSTs were above normal in much of the equatorial Pacific and positive anomalies are prominent especially in the central and eastern parts.

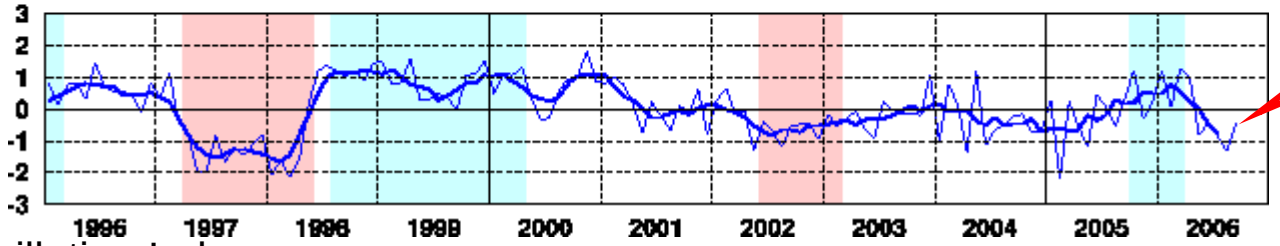
NINO.3 SST deviation

(150W-90W, 5S-5N)



+ 0.8 C

SOI

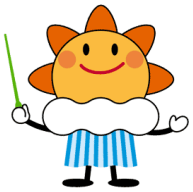


- 0.5

SOI: Southern Oscillation Index

Recent evolution of

SST anomalies along the Equatorial Pacific

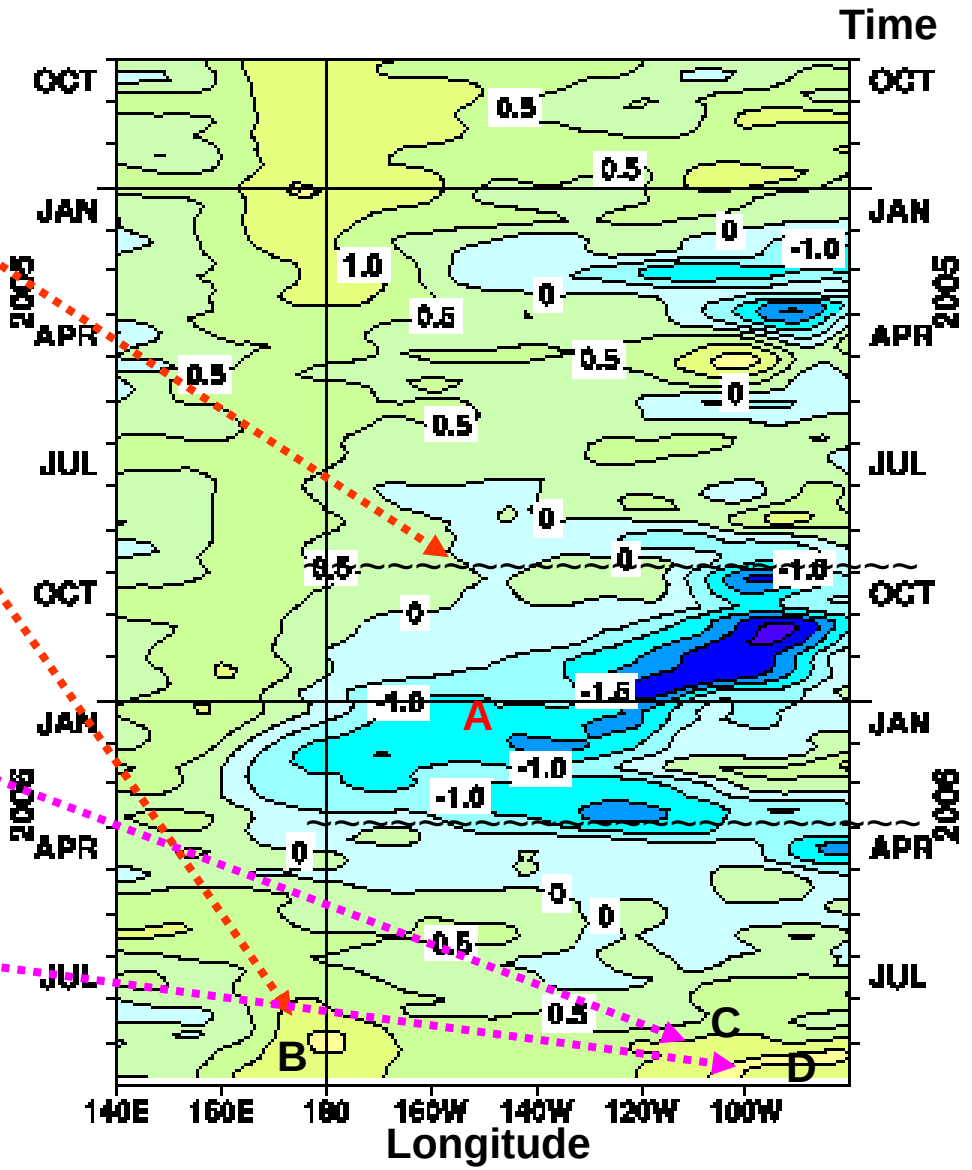


A: La Niña event occurred from autumn 2005 to spring 2006.

B: Positive anomalies exceeding +1.0˚C, which had been found around the dateline, expanded westward and found from 160˚E to 170˚W in late September.

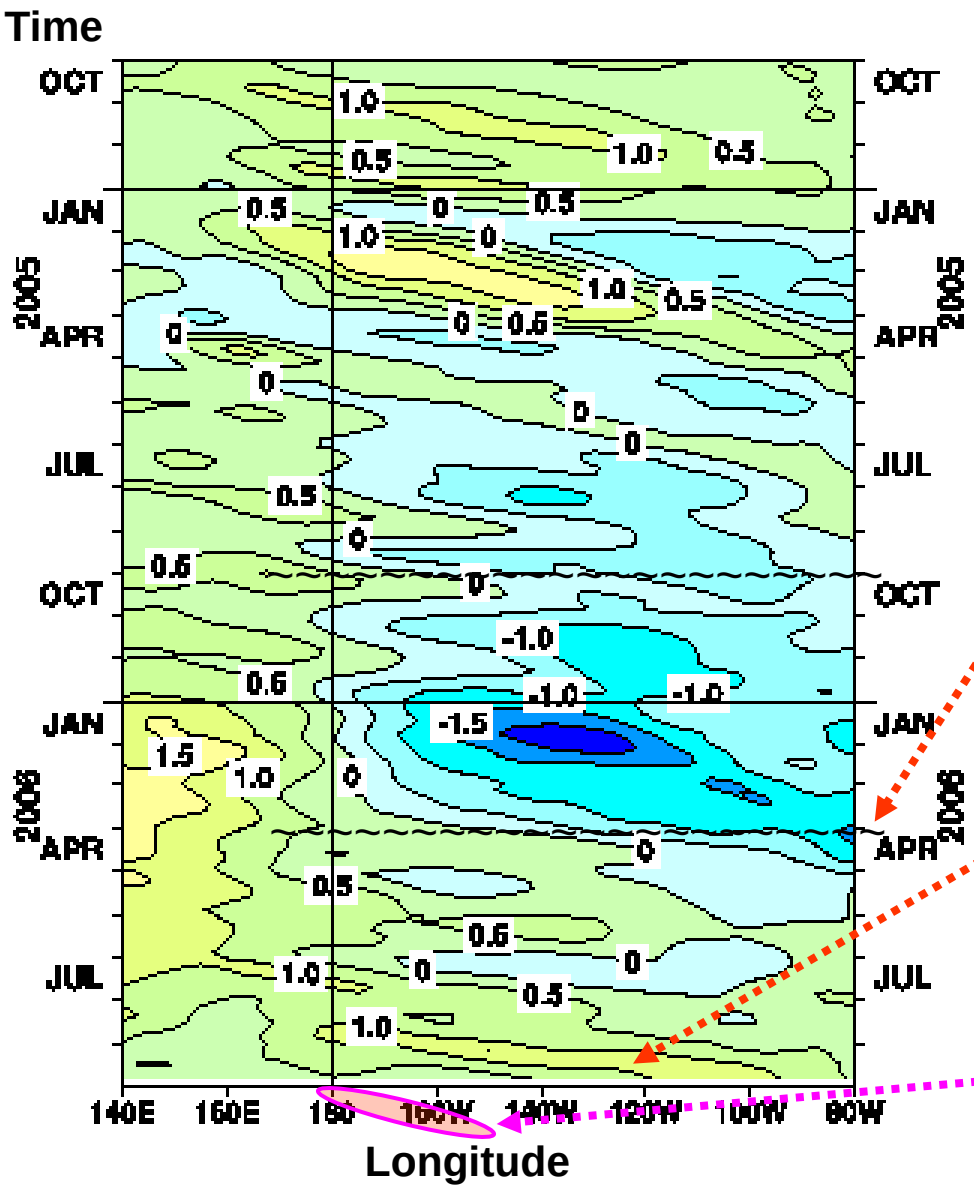
C: Positive anomalies exceeding +1˚C, which had been found from 120˚W to the South American coast, have continued to be found in late September.

D: Positive anomalies exceeding +1.5˚C, which appeared around the South American coast, moved westward and found around 105˚W in late September.



Recent evolution of

Ocean Heat Content along the Equatorial Pacific



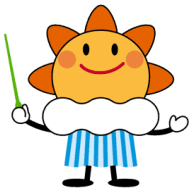
Ocean Heat Content (OHC) : vertically averaged temperatures in the top 260m.

La Niña event terminated in spring 2006

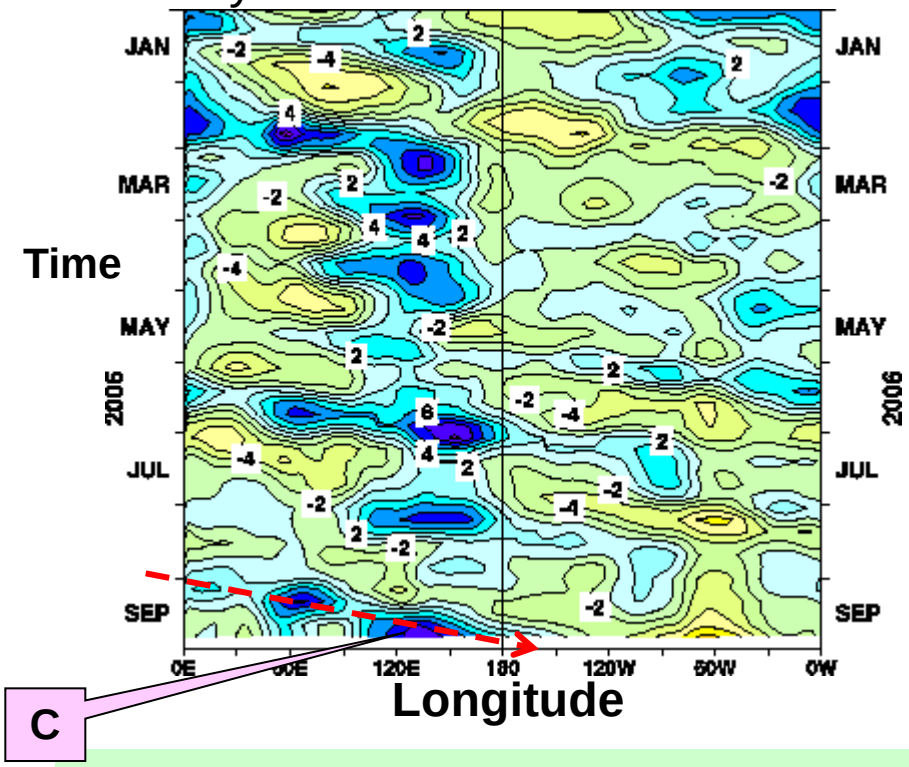
The warm waters, which had appeared around the dateline in the middle of August, moved eastward and reached off the South American coast in late September.

The warm waters appeared in early October.

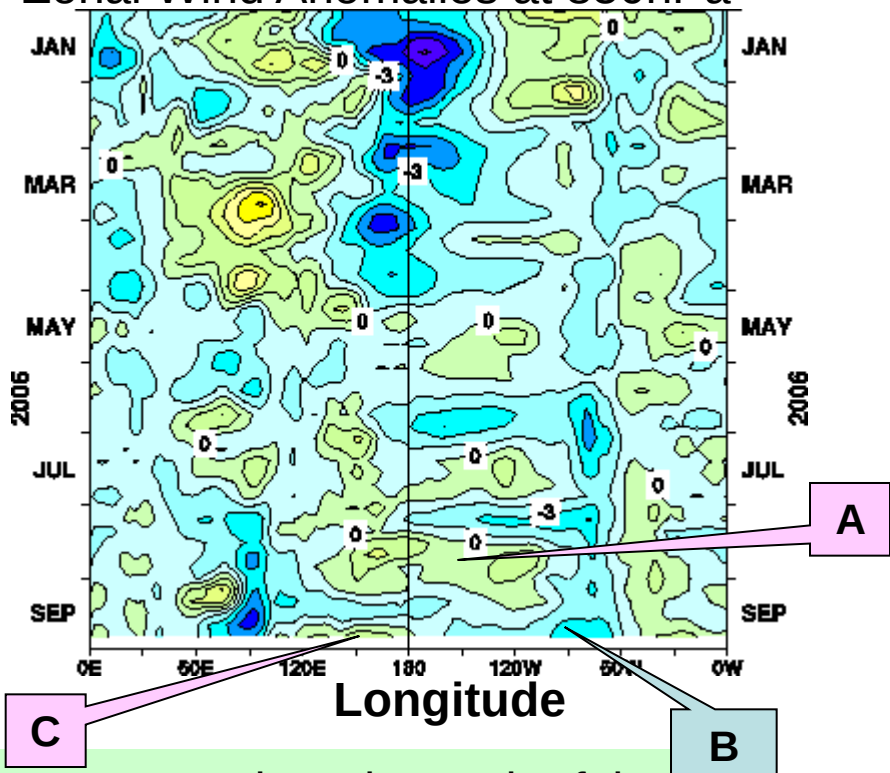
Madden-Julian Oscillations (MJO)



Velocity Potential Anomalies at 200hPa



Zonal Wind Anomalies at 850hPa



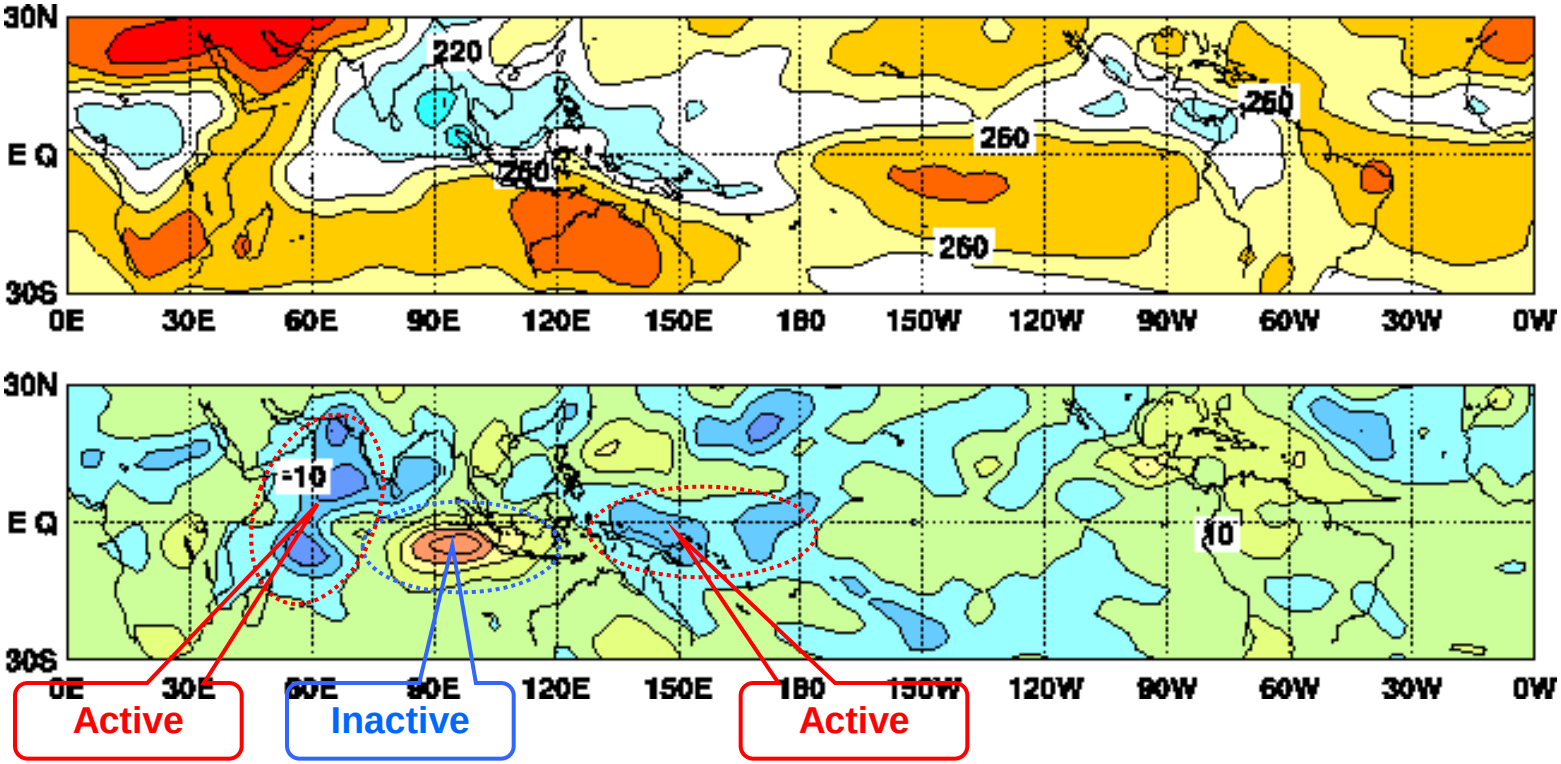
(A) Westerly anomalies were found at the lower troposphere in much of the equatorial Pacific from the middle of August to the early September.

(B) Easterly anomalies were found in much of equatorial Pacific during the middle of September and in the eastern part during late September.

(C) In accordance with the active convection over the western equatorial Pacific due to eastward propagating MJO, westerly wind anomalies which were found over the western equatorial Pacific in late September 2006.

Convective activities

Monthly mean outgoing long wave radiation (OLR) and anomalies in **September 2006**. Base period for normal is 1979-2000. Original data were provided by NOAA.

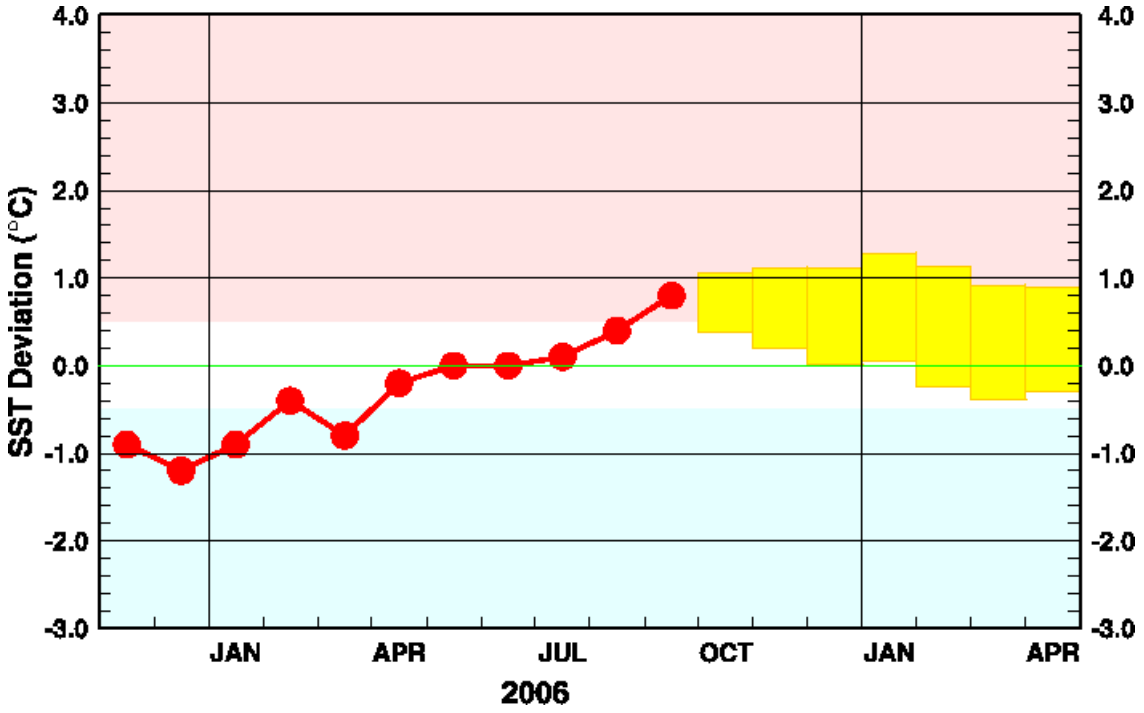


Convective activities were above normal over the New Guinea Island to the dateline, and were near normal in the other parts.

NINO.3 SST Forecast

by JMA El Niño Forecast Model (CGCM)

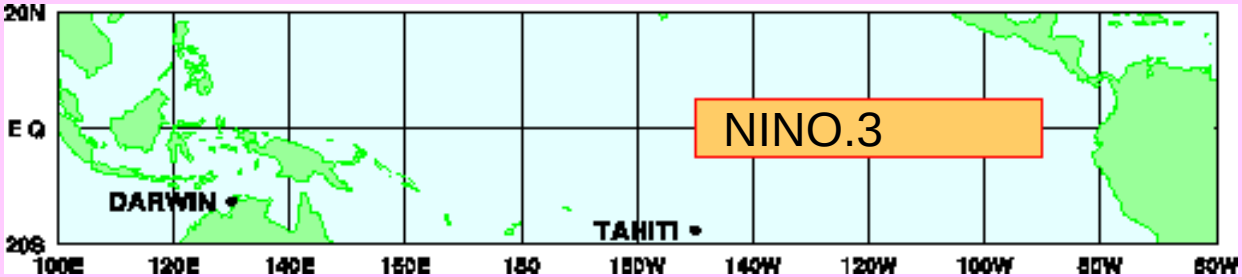
Outlook of the SST deviation for NINO.3 by the El Niño forecast model. This figure indicates a time series of the monthly sea surface temperature (SST) deviation for NINO.3 (5N-5S, 150W-90W). Thick lines with closed circles show the observed SST deviation and boxes show the predicted one for the next six months by the El Nino forecast model. Each box denotes the range where the SST deviation will be included with the probability of 70%.



NINO.3 SST will continue to be above normal through the autumn to winter, and then, it will be weakened and become near normal from late winter to spring.

JMA Definitions for El Niño and La Niña events

NINO.3 region (5˚N-5˚S, 150˚W-90˚W)



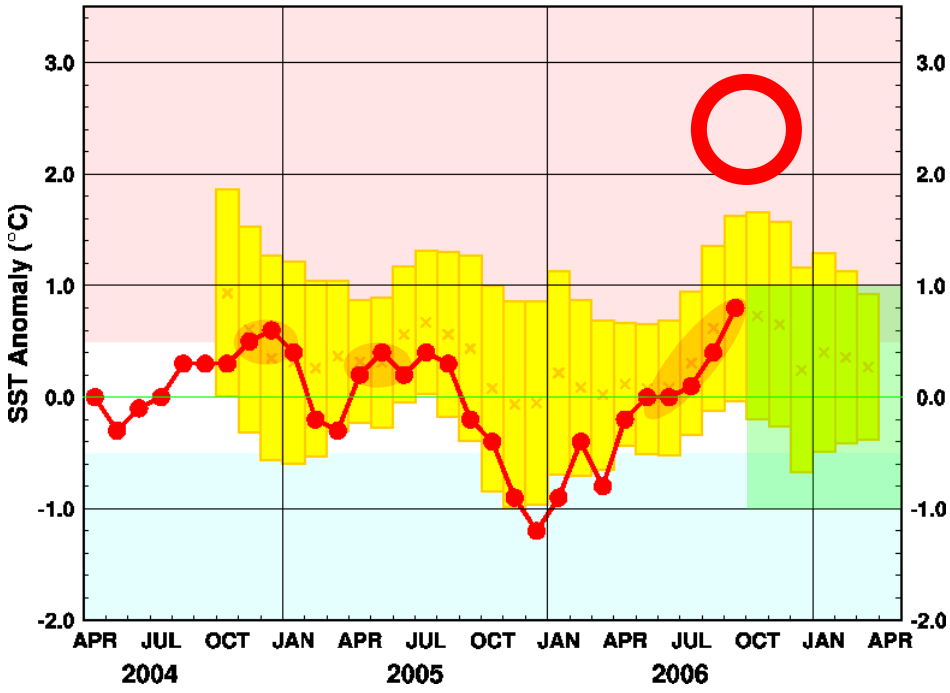
- Based on 5-month running mean values of NINO.3 SST deviations from the climatological mean based on a sliding 30-year period.

El Niño: the value is greater than or equal to **+0.5 ˚C** continuously for six months or longer.

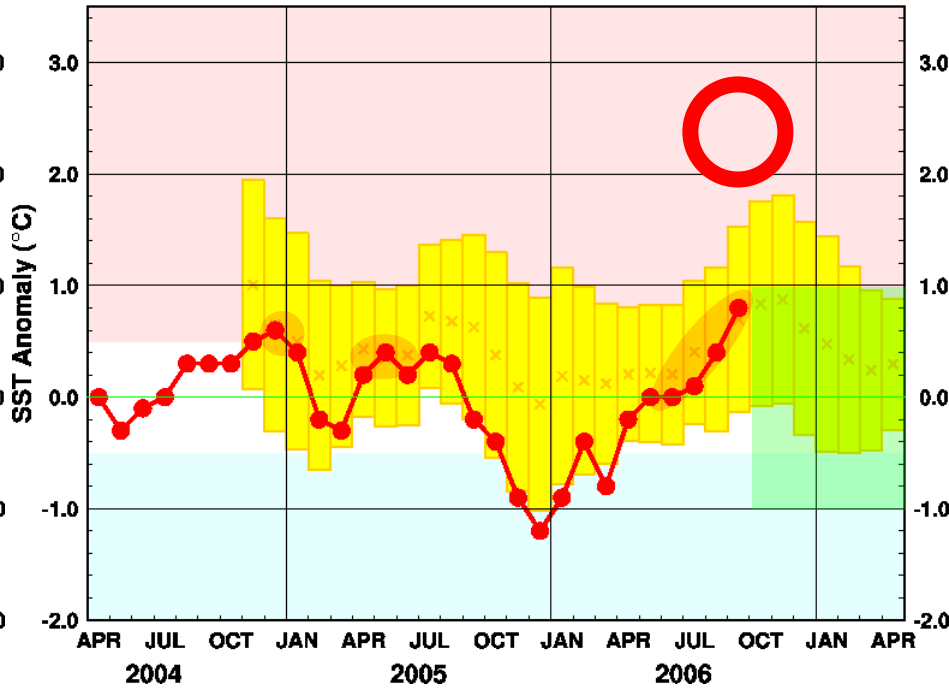
La Niña: the value is less than or equal to **-0.5 ˚C** continuously for six months or longer.

Recent forecast results for NINO.3 SST deviation

5-month lead



6-month lead



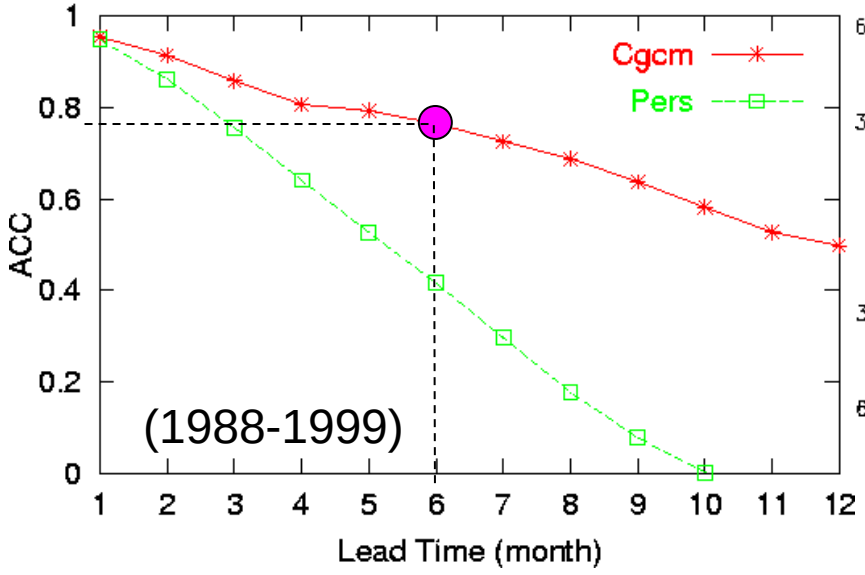
The 5 and 6 month lead NINO.3 forecasts (yellow boxes) have much agreement with observation (red solid line).

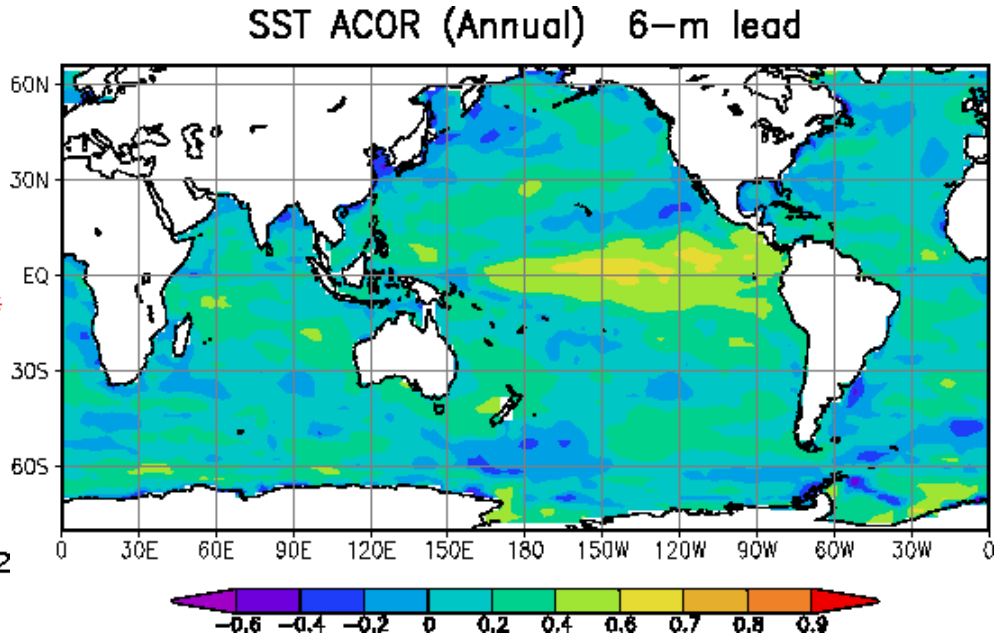
Skill of the JMA's El Niño Forecast Model (CGCM)

(verified with the 16-year hindcasts from1988 to 2003)

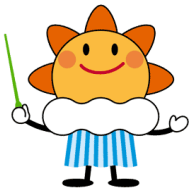
NINO.3 : All seasons

Anomaly correlation





ACC score for NINO.3 SST is about 0.7 for the lead time of 6 months

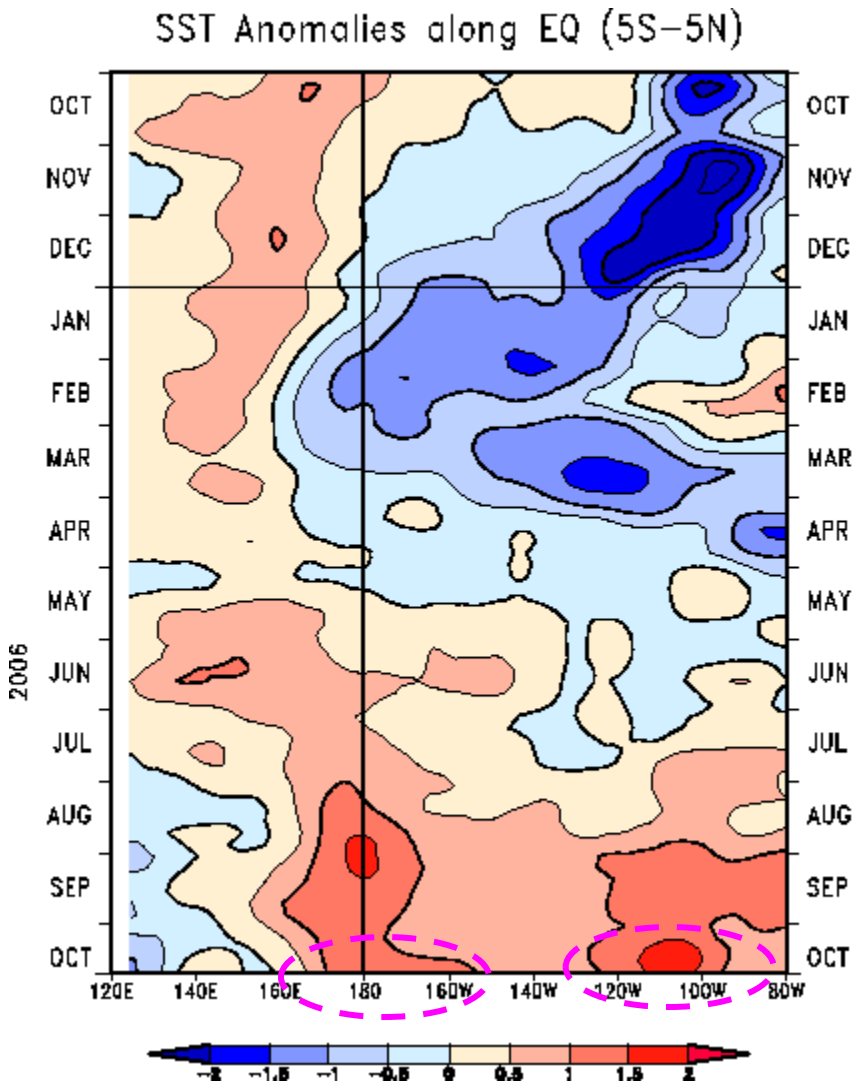


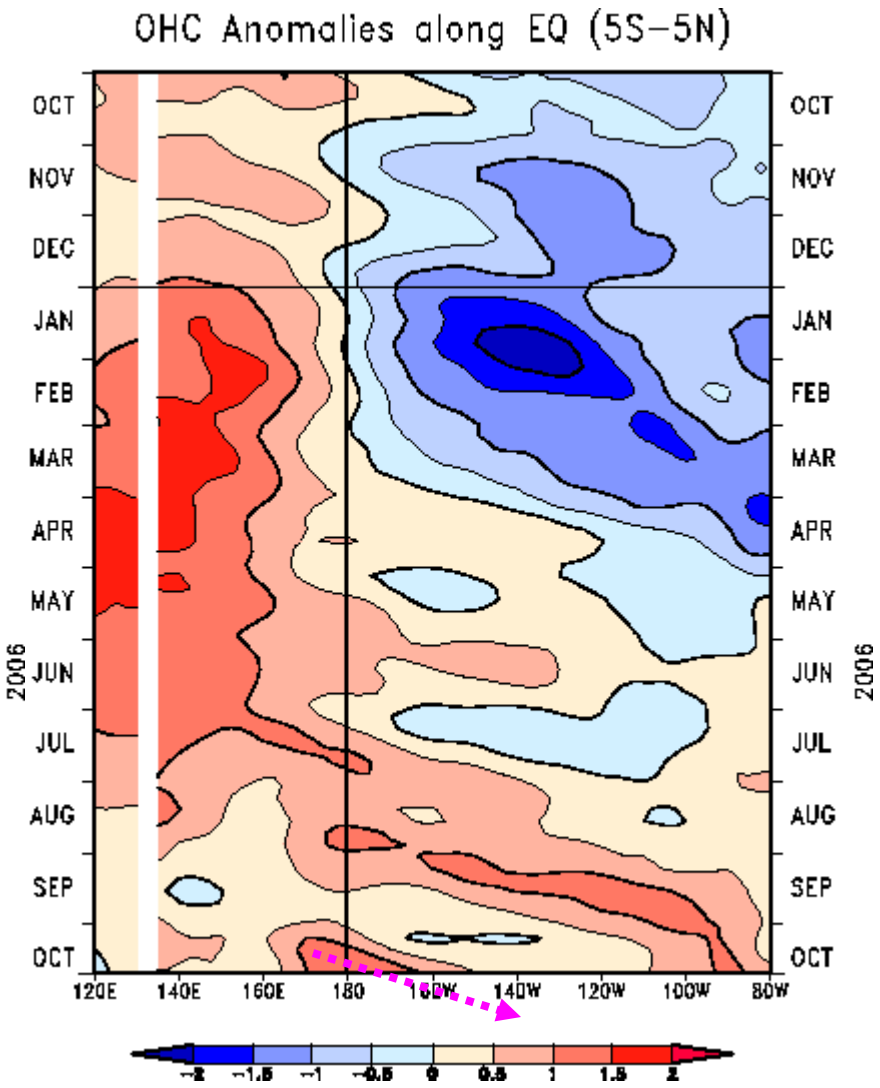
[Appendix]

Most Up-to-date Situation

until 22nd Oct. 2006

Latest SST and OHC data until 22 October 2006

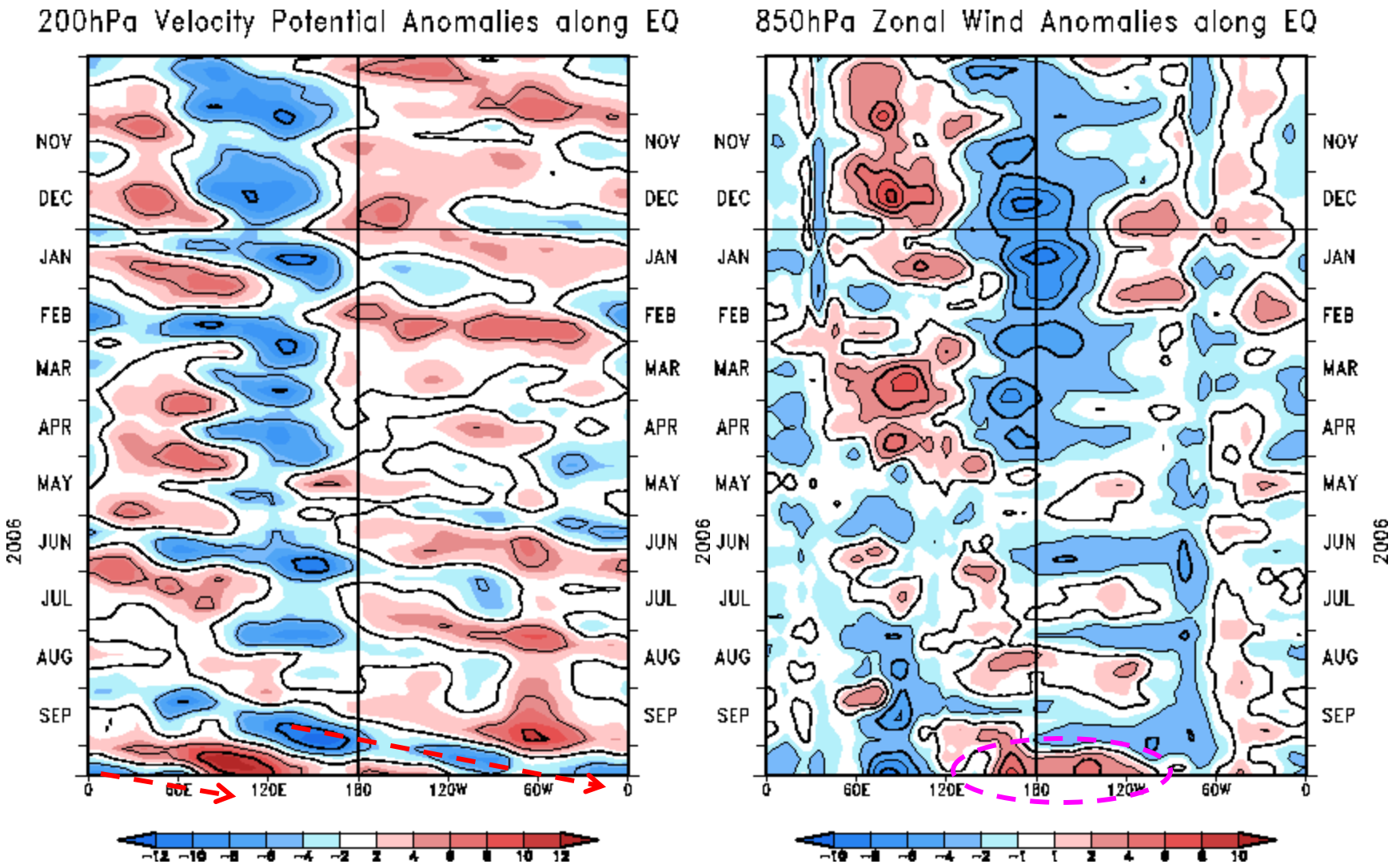




Positive anomalies in the eastern part have been strengthened and these in central part have expanded eastward.

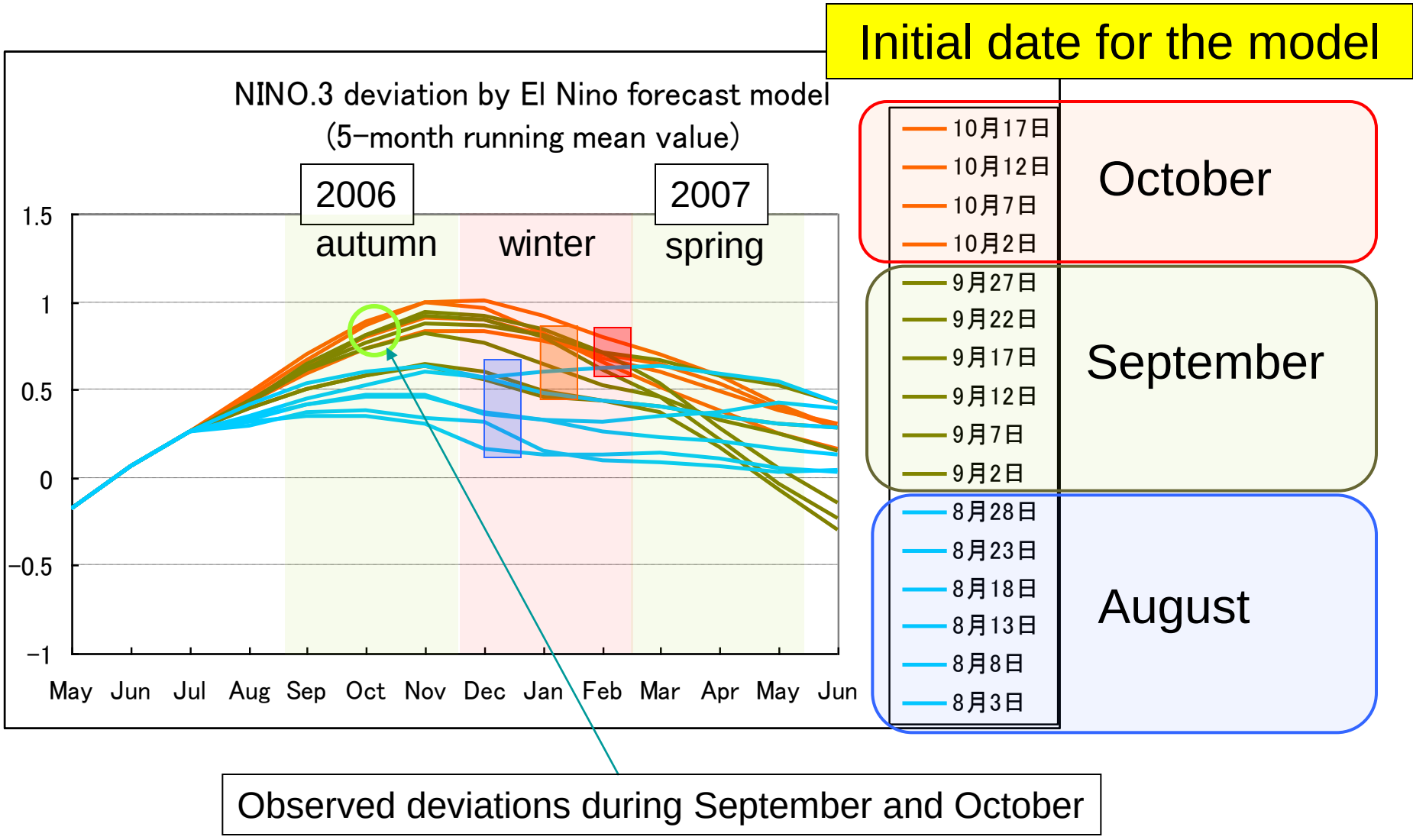
The warm waters appeared in early October and are propagating eastward now.

Latest MJO and 850hPa wind data until 27 October 2006



In accordance with the passage of active convection area due to MJO, westerly wind anomalies prevailed in much of the equatorial Pacific during October.

Previous outlook and Latest forecasts of the El Niño forecast model



Conclusion

- Judging from the above situation, the NINO.3 SST will continue to be above normal during the coming winter and gradually return to near normal by next spring.
- So it is likely that this warm SST condition in the eastern Pacific is going to be identified as an El Niño event.

Thank you
for your attention.