

Climate Outlook for 2013-14 Winter Over Korea

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KMA

Korea Meteorological Administration

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1. Verification for 2012-13 Winter



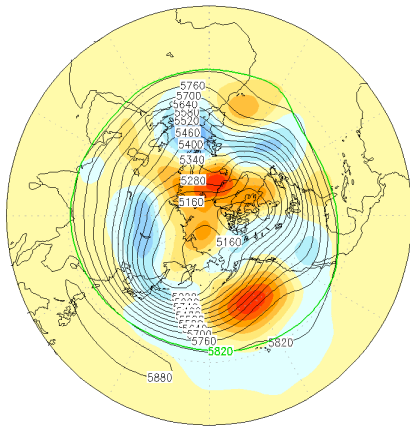
Verification for 2012-13 Winter Outlook

- ✓ Arctic sea ice area was recorded minimum in 2012.
- ✓ Vertical temperature was continuously warmer than normal over the arctic.
- ✓ Snow cover in Mongolia and Northeastern China was above normal.

Impact of East Asian Winter Monsoon is expected to be near normal or stronger than normal over China, Mongolia and Korea, while weaker than normal over Okinawa and Amami, Eastern and Western Japan.

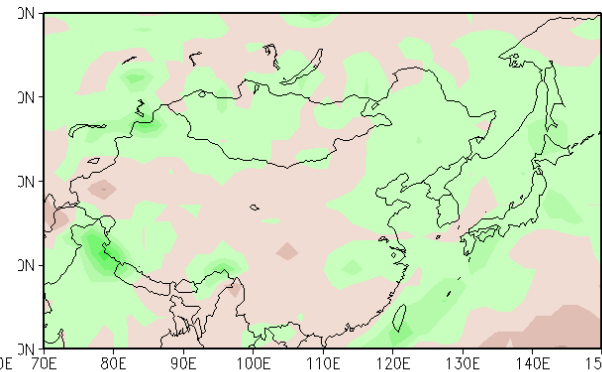
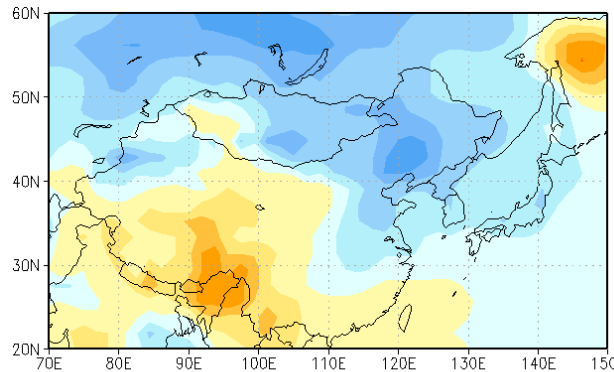
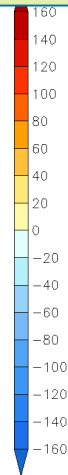
Forecast

500hPa GPH Mean
01Dec2012 - 28Feb2013



2012-13 Winter

- Negative AO, Ural blocking
→ Strong East Asian winter monsoon

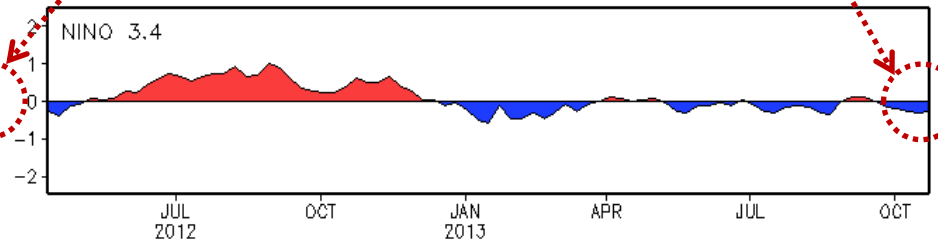
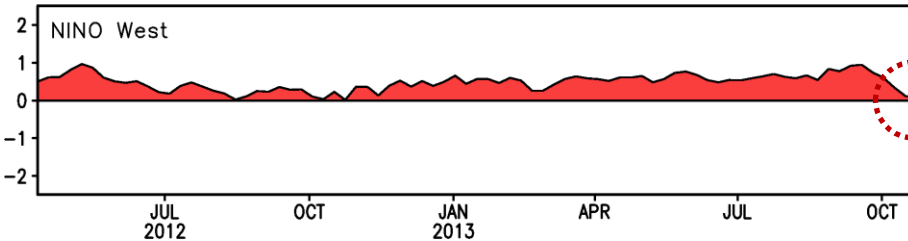
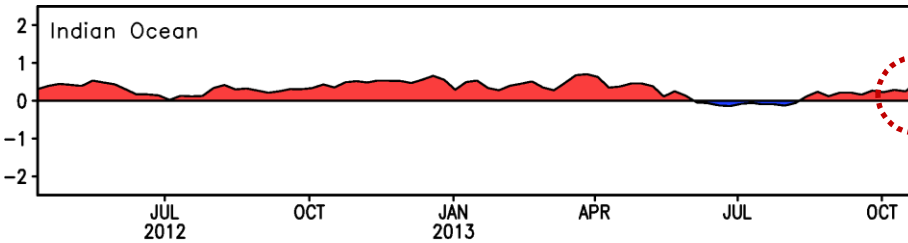
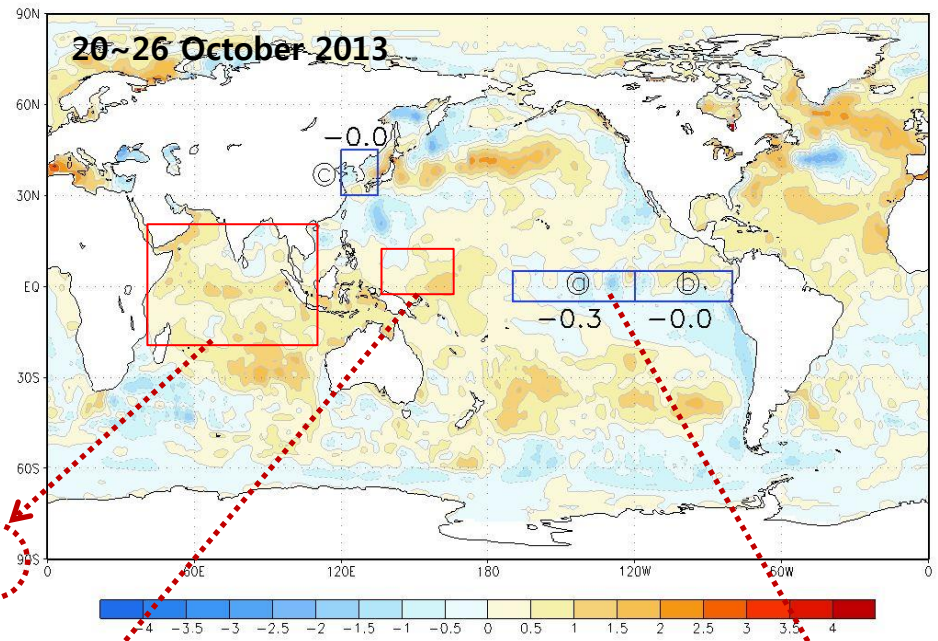


2. Current Conditions

A decorative horizontal band with a blue gradient background. On the right side, there are several overlapping, light blue circular arcs that create a sense of motion or a stylized globe.

Sea Surface Temperature (SST)

- SSTs are slightly below normal in the Nino3.4.
- SSTs are recovering the normal condition in the western Pacific.
- Warm condition become intensified.

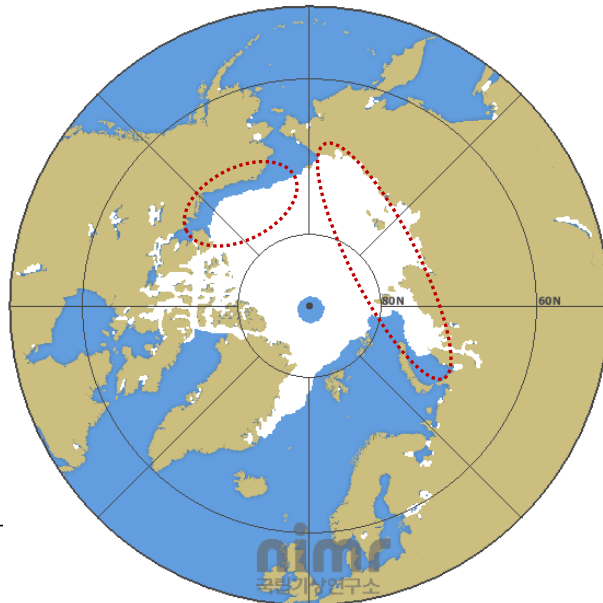


Last Week : 20 Oct 2013 ~ 26 Oct 2013

Arctic Sea Ice

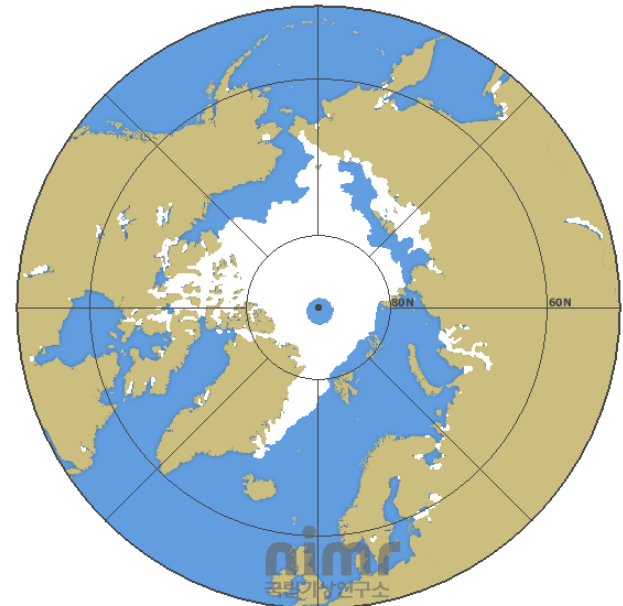


SSMIS Sea Ice
(2013.10.15 ~ 10.21)

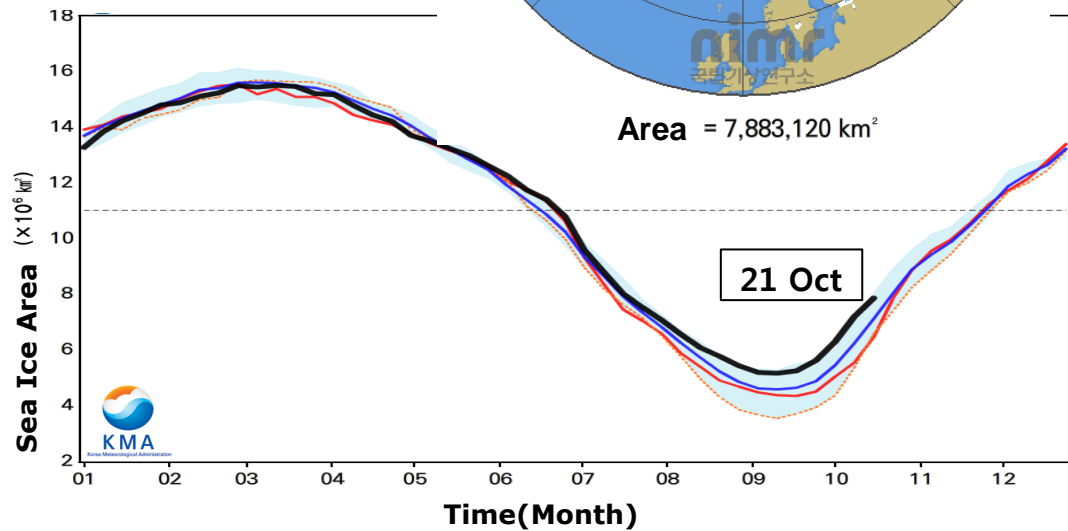


Area = 7,883,120 km²

SSMIS Sea Ice
(2012.10.15 ~ 10.21)



Area = 6,600,630 km²

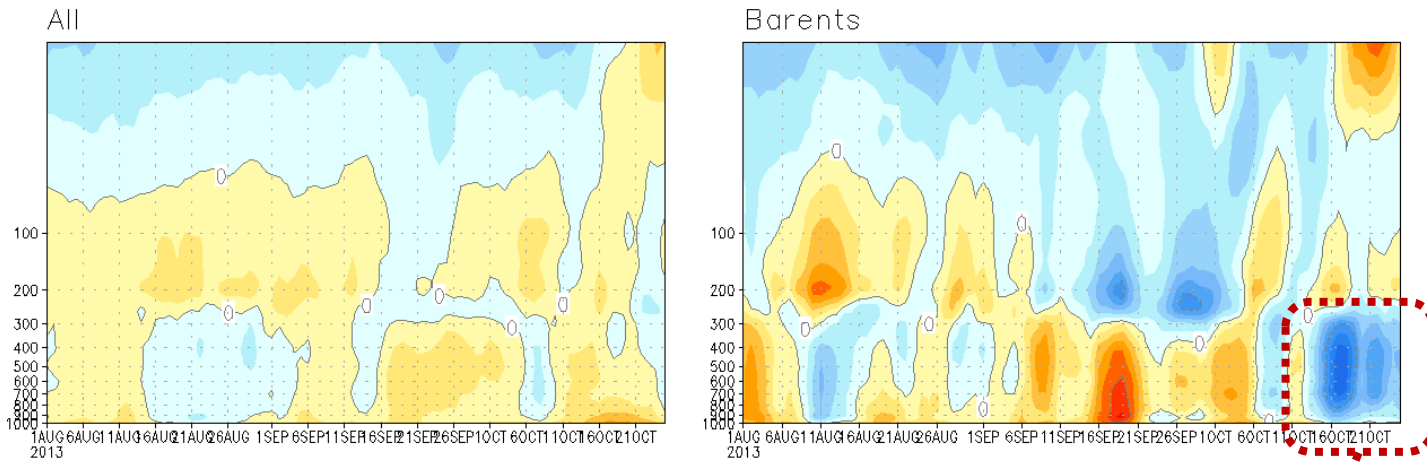


21 Oct

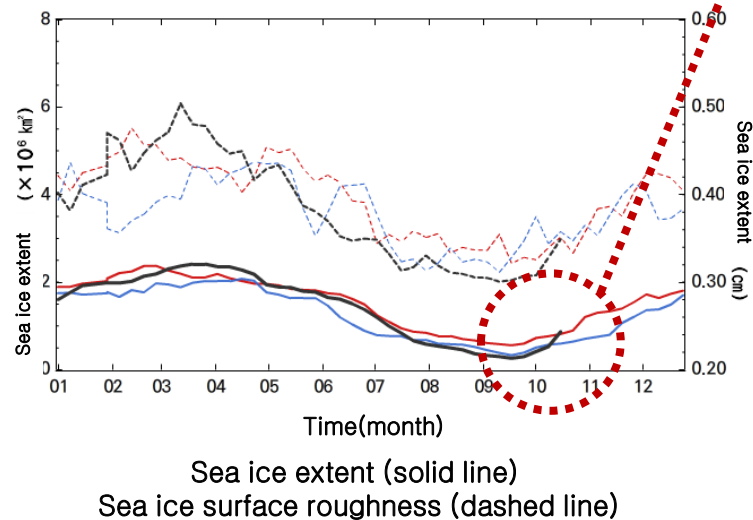
2013년
 2012년
 2007년
 주간단위 Mean ('07 ~ '12)
 Mean ('07 ~ '12)
 Max/Min

Arctic Sea Ice

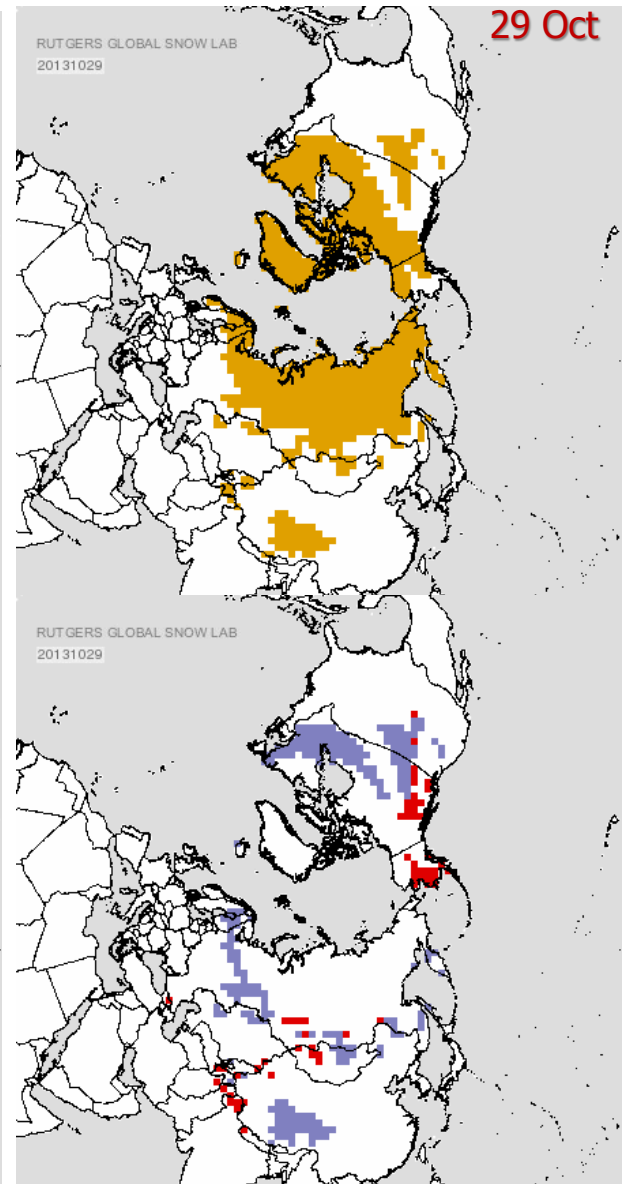
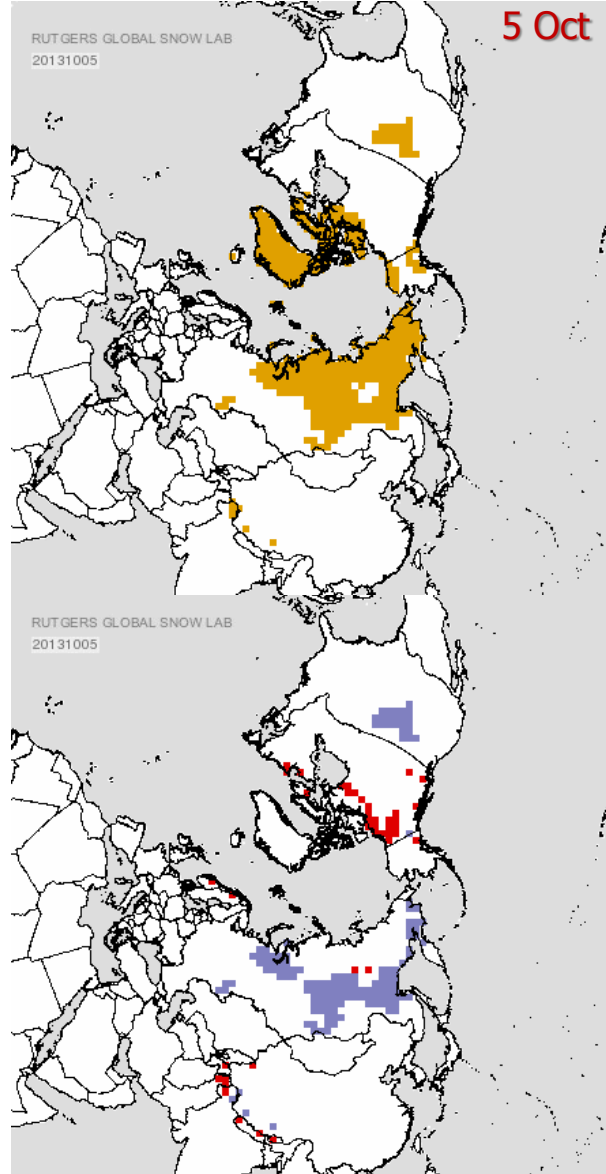
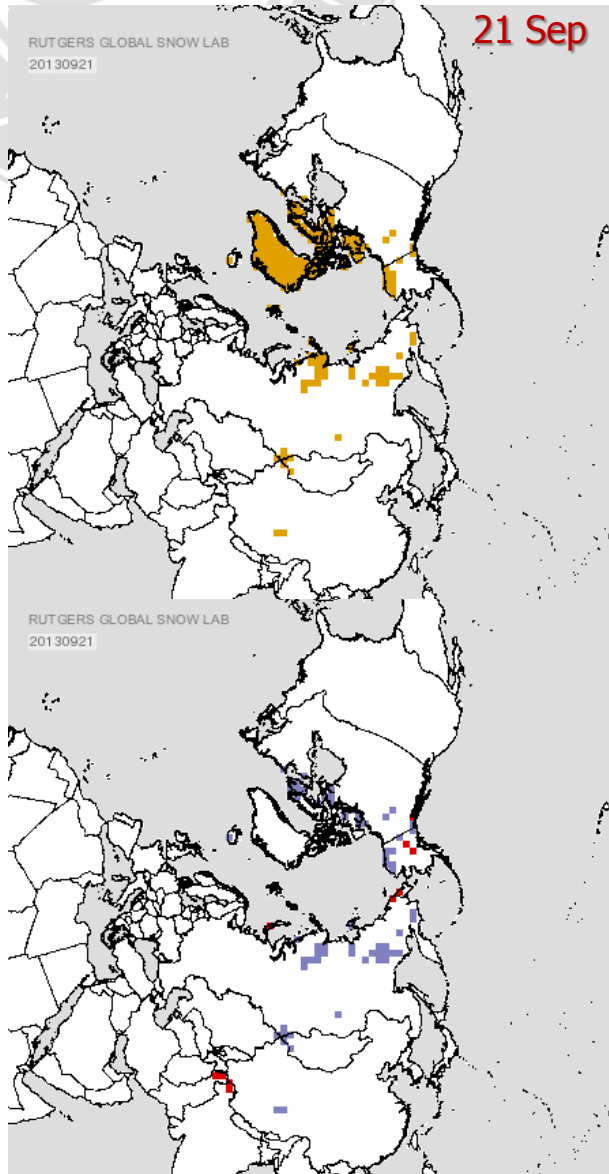
NCEP/NCAR Temperature Anomaly Profile (65°N~90°N)
(01Aug2013~25Oct2013)



Time series of Arctic Sea Ice of Barents Sea



Snow Cover and departures



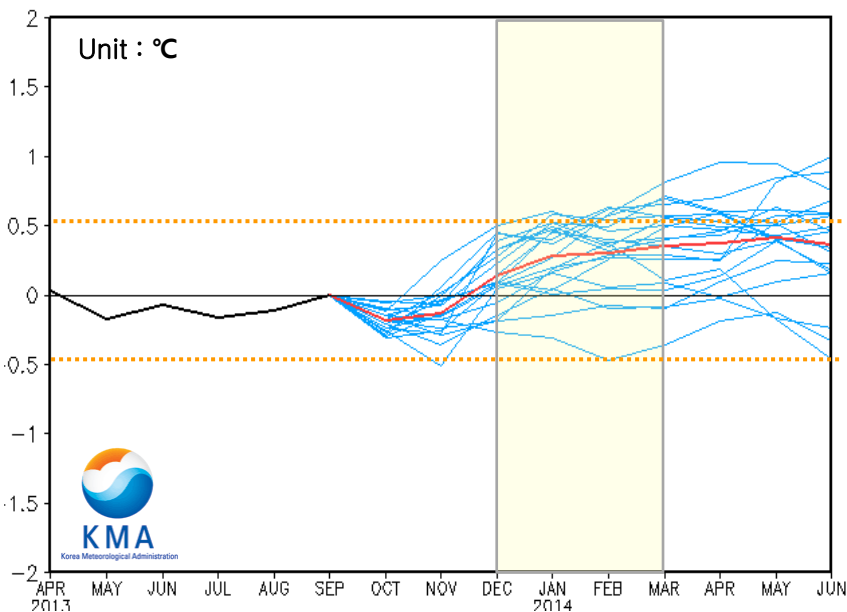
3. ENSO Prediction



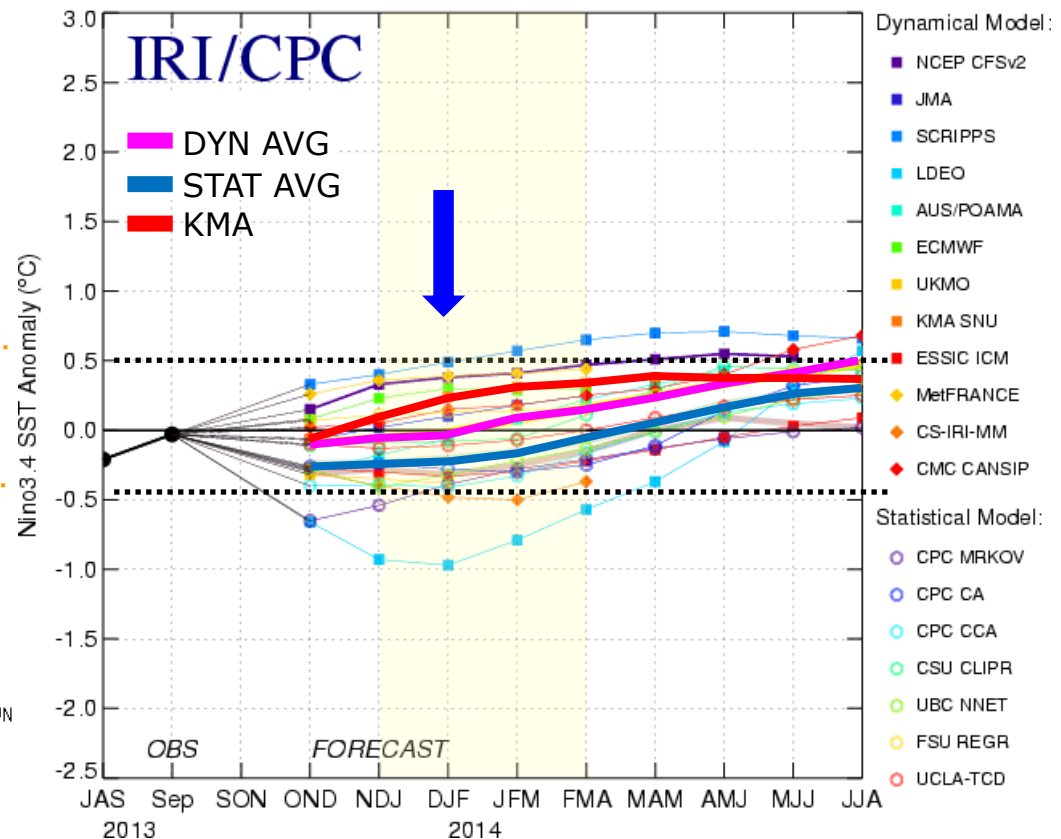
ENSO Prediction

Model Predictions for SST Anomalies in Nino 3.4

6-Month Forecast of Nino3.4 SST Anomalies / 09, 2013



Mid-Oct 2013 Plume of Model ENSO Predictions

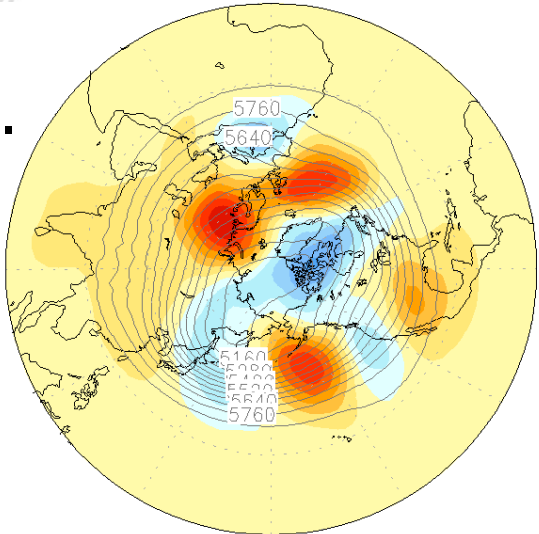


4. Dynamic Model Predictions (KMA GDAPS, LC-LRFMME)

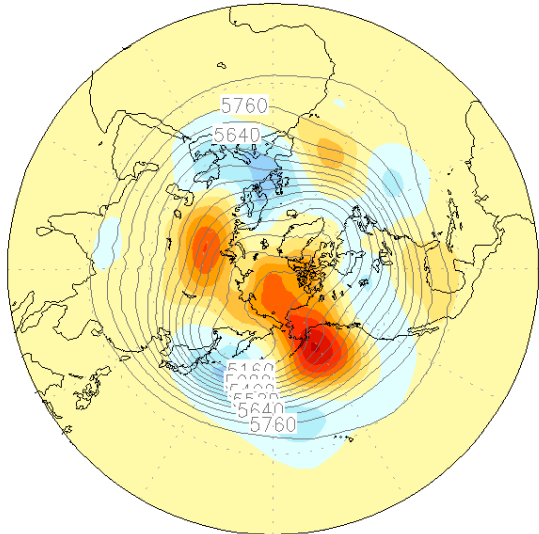
500hPa GPH Anomalies for DJF (GDAPS)



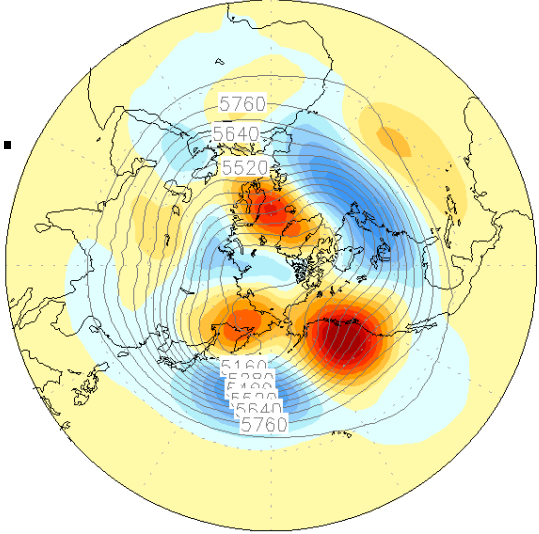
Dec.



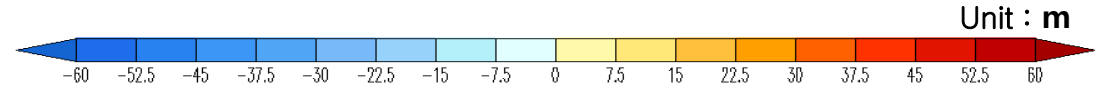
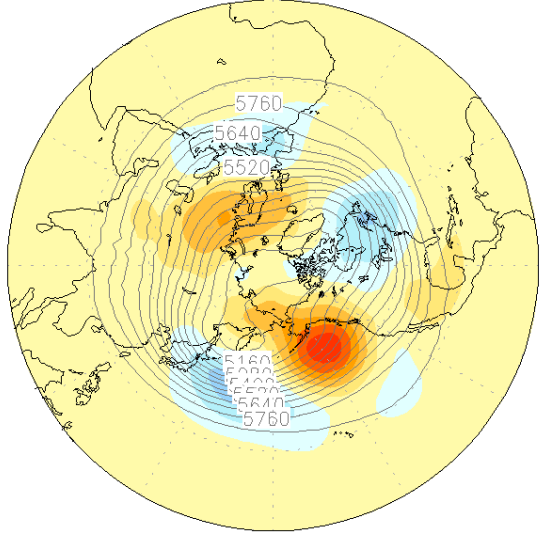
Jan.



Feb.



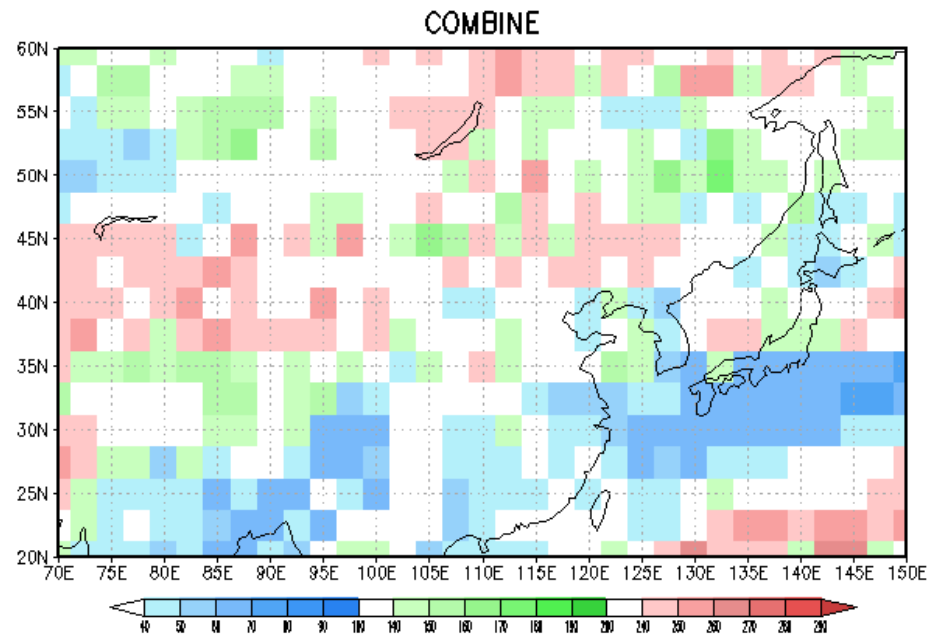
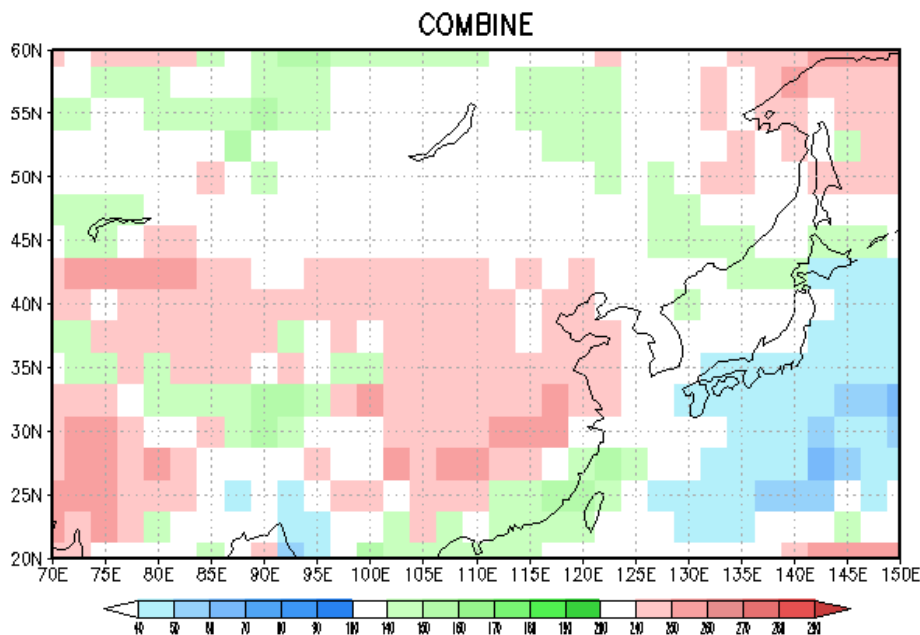
DJF



Probabilities of Temp. & Prec. for DJF(GDAPS)

Temperature

Precipitation



GloSea5 prediction of 500hPa GPH

GloSea5
N216L85

GloSea5
N216L85

Contour - Forecast
Shade - Anomaly

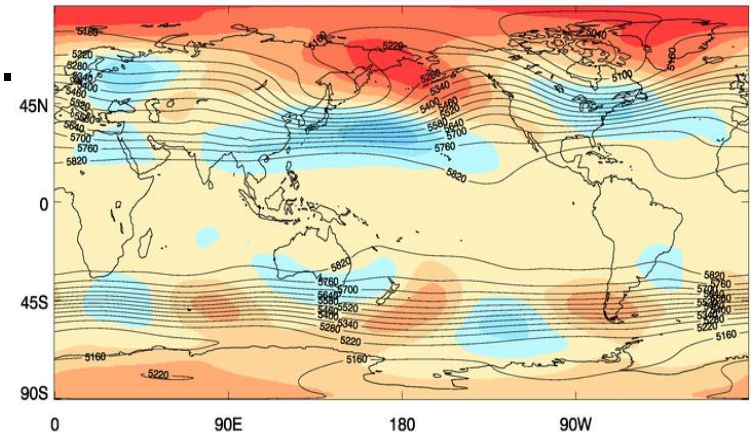
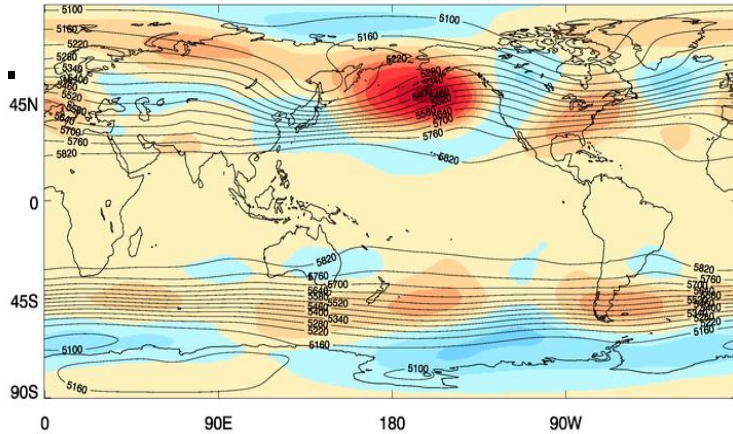
Contour - Forecast
Shade - Anomaly

Dec.

Jan.

KMA H500 mean & anomaly, Dec

KMA H500 mean & anomaly, Jan



forecast date : 20131004 ~ 20131024 || Forecast(41) Hindcast(237)

forecast date : 20131004 ~ 20131024 || Forecast(41) Hindcast(237)



Shade - Anomaly

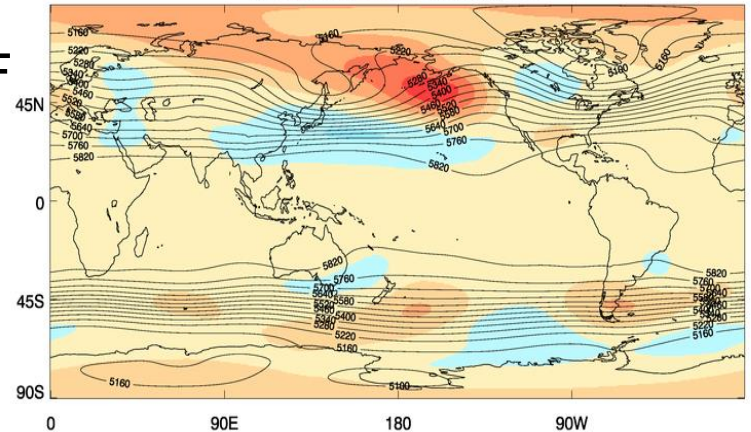
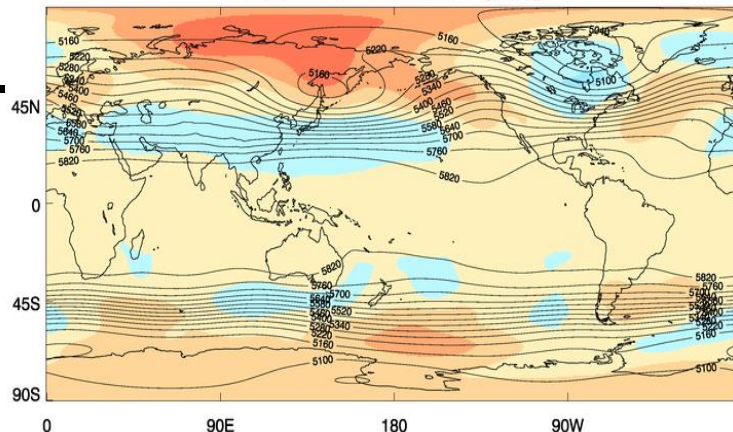
Shade - Anomaly

KMA H500 mean & anomaly, Feb

KMA H500 mean & anomaly, DJF

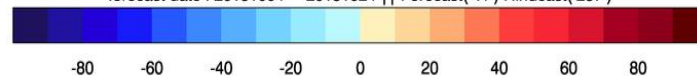
Feb.

DJF



forecast date : 20131004 ~ 20131024 || Forecast(41) Hindcast(237)

forecast date : 20131004 ~ 20131024 || Forecast(41) Hindcast(237)



-80 -60 -40 -20 0 20 40 60 80

-80 -60 -40 -20 0 20 40 60 80

WMO LC-LRFMME Website



WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble

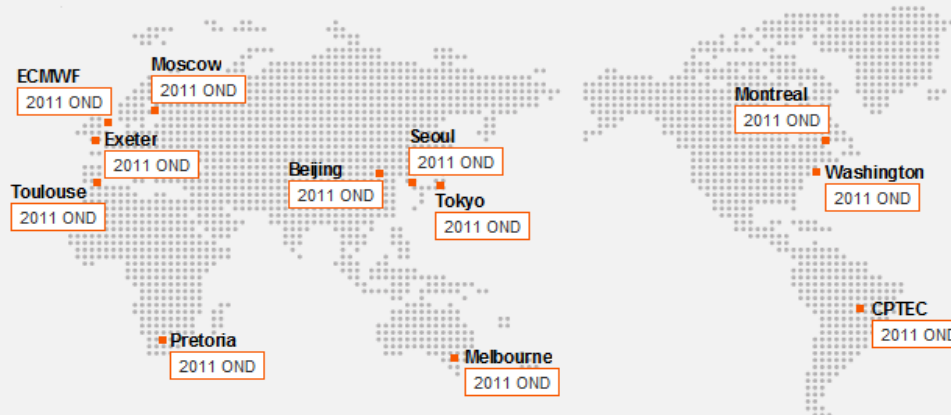
<http://www.wmolc.org>

- Home
- About us
- News
- Data & Plot
- Related Sites

WMO Lead Centre for SVSLRF >>

Introduction | Deterministic MME | Probabilistic MME | Verification Measures | Energetics | References

Latest Forecast data



Link to 12 GPCs

Latest PMME plot

View all >

Latest Individual Forecast plot

View all >

Notice / News

More >

- Check! System Requirements**
- All GPCs(12) for OND 2011 are uploaded new 2011.09.26
- Forecasts for OND 2011 are uploaded new 2011.09.15
- Multi Model Ensemble Forecasts are now available! 2011.08.25
- All GPCs(12) for SON 2011 are uploaded 2011.08.19
- Forecasts for SON 2011 are uploaded 2011.08.18

WMO Global Producing Centres

Canada	Montreal	BCC	Beijing	ECMWF	Hydrometeorological Centre of Russia	Moscow
Seoul		Tokyo		Toulouse	Washington	
Exeter	PCOAMA	Melbourne	Pretoria	CPTEC	CPTEC	



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today : 40 total : 2194

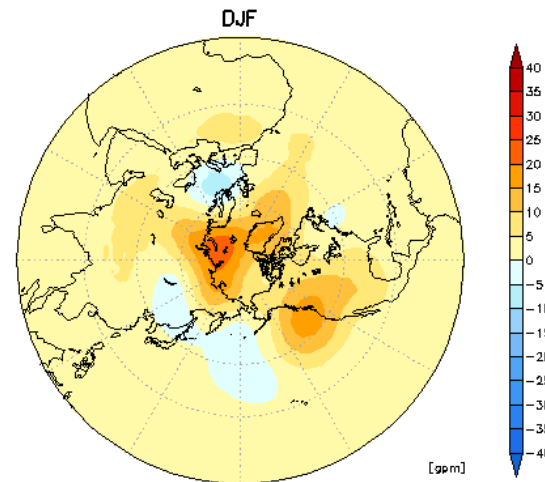
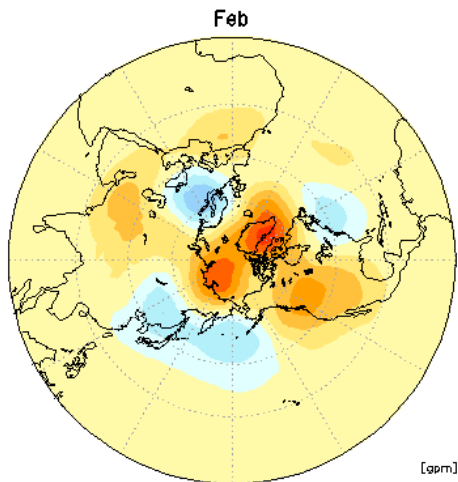
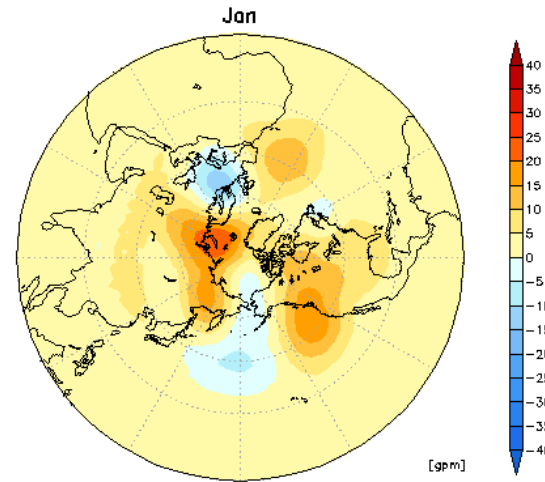
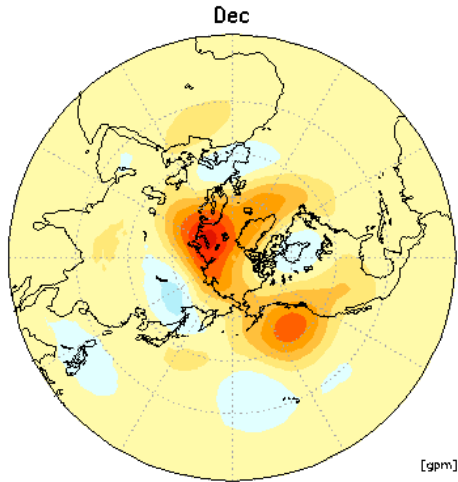
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MME prediction of 500hPa GPH

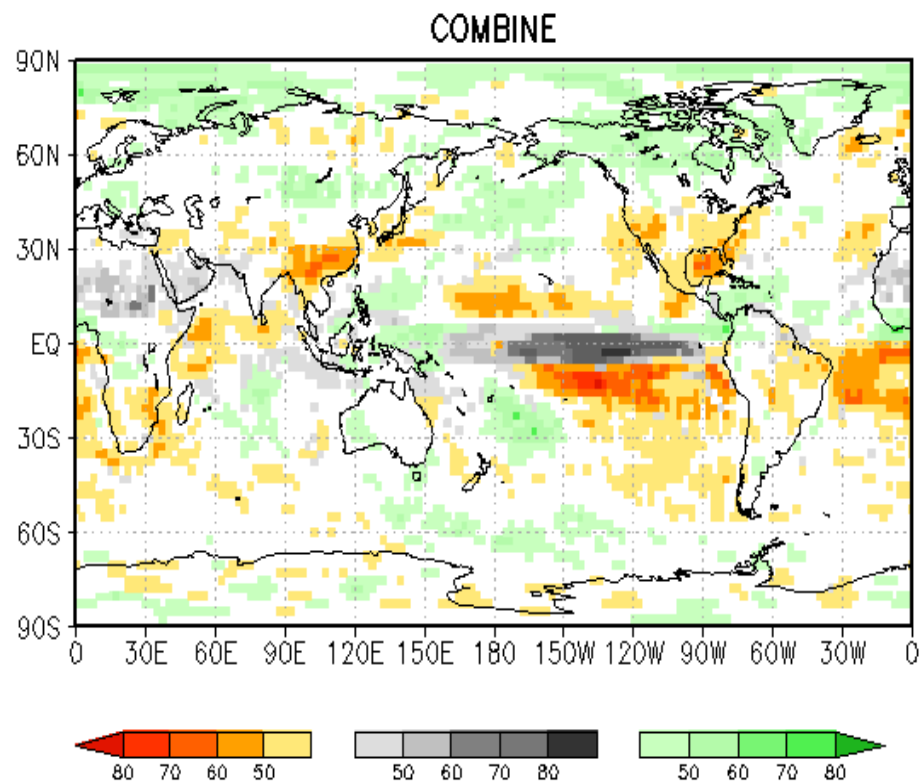
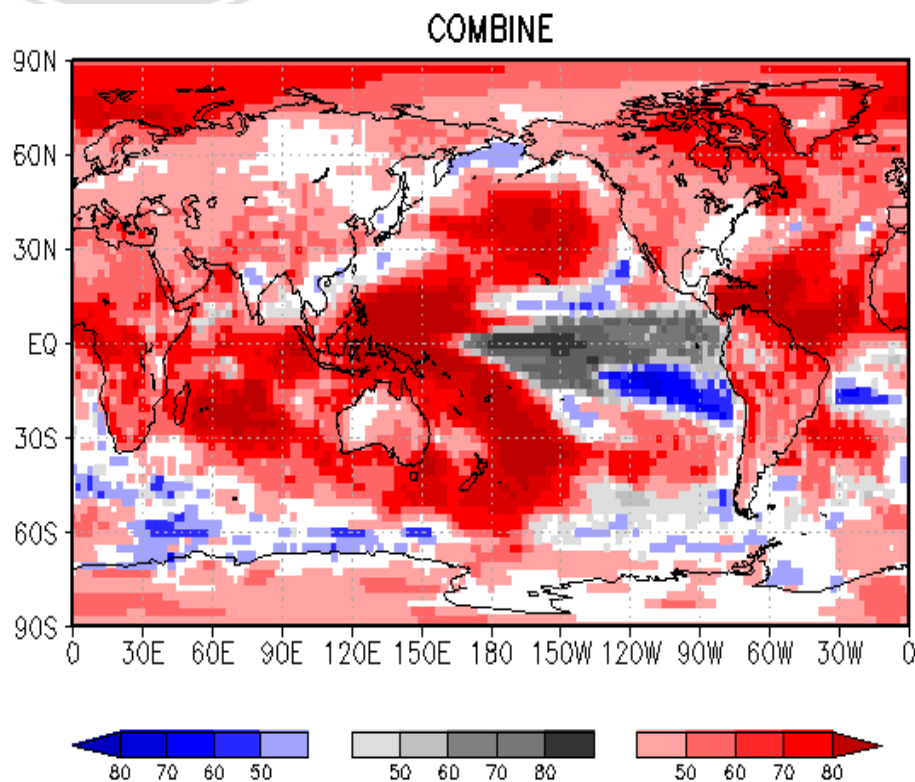
GPC_Seoul/Washington/Melbourne/Montreal(cancm3/cancm4)/ECMWF/EXETER/Toulouse/CPTC

500hPa GPH



PMME Prediction of Temp. & Prec. for DJF

GPCs : Seoul, Montreal(CANCM3, CANCM4), EXTER, CPTEC, MELBOURNE



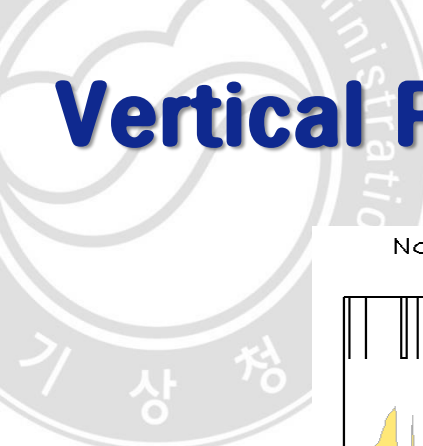
5. Summary

- The winter monsoon is expected to be normal or stronger than normal over Korea in 2013-14 winter.
- ✓ Near normal or below normal temperatures in Korea
- ✓ Near normal or below normal precipitation in Korea
- Near normal SSTs in Nino3.4 are predicted to continue into 2013-14 winter.

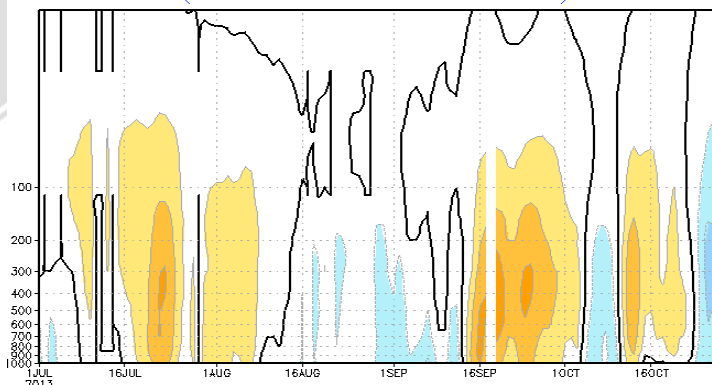
Thank You !

A decorative horizontal band with a blue gradient background. On the right side, there are several overlapping, light blue circular arcs that create a sense of motion or a stylized globe.

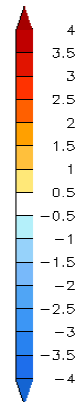
Vertical Profile over the Arctic



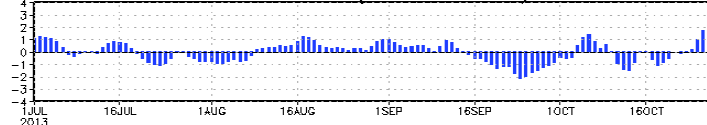
Normalized GPH anomaly (65°N–90°N)
(01Jul2013 – 28Oct2013)



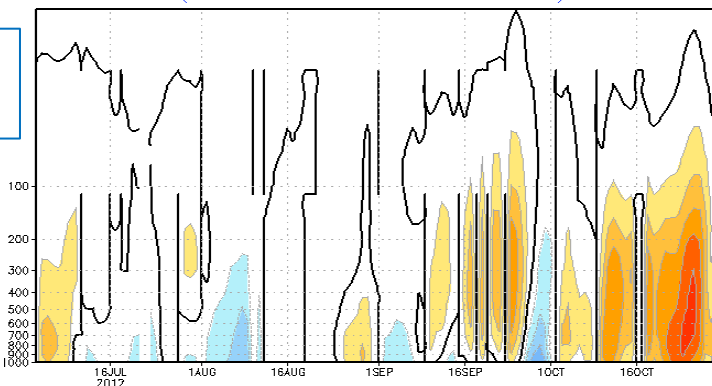
1 Jul ~ 30 Oct 2013



AO index (1000mb Z)

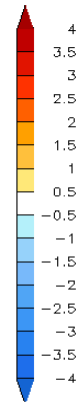
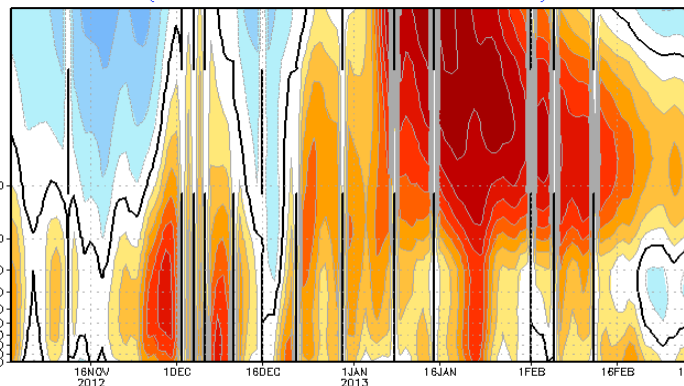


Normalized GPH anomaly (65°N–90°N)
(03Jul2012 – 30Oct2012)

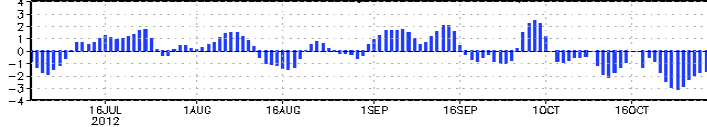


1 Jul 2012
~ 28 Feb 2013

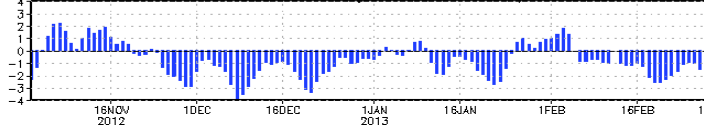
Normalized GPH anomaly (65°N–90°N)
(02Nov2012 – 01Mar2013)



AO index (1000mb Z)



AO index (1000mb Z)

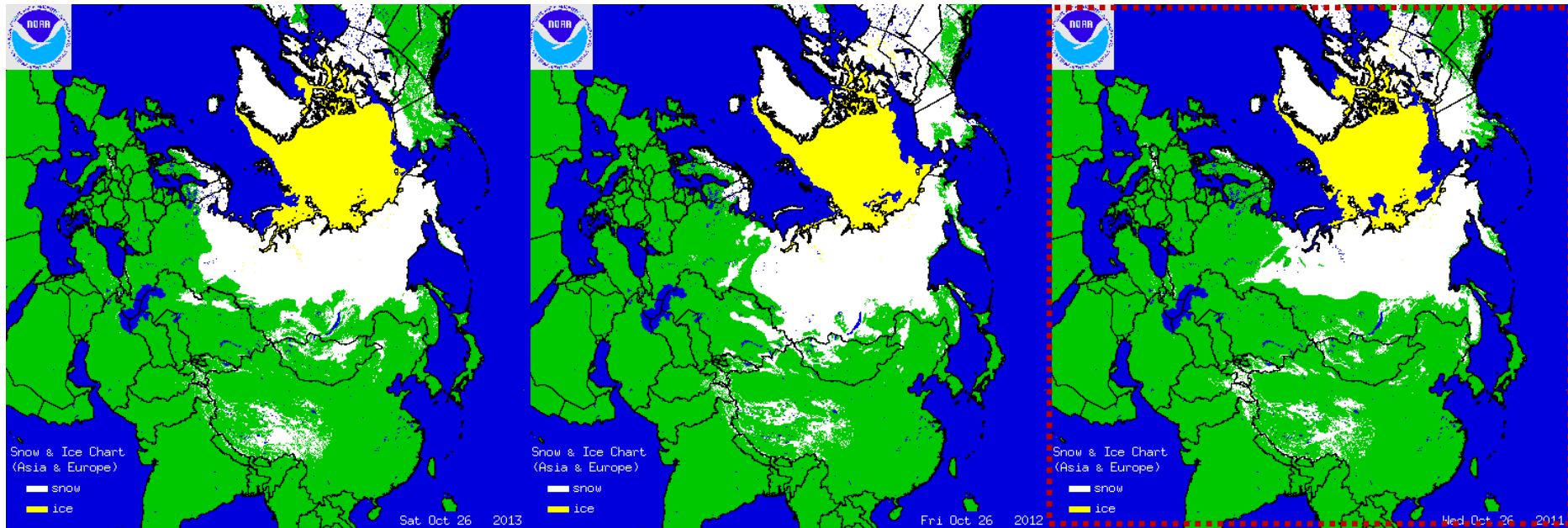


Snow Cover comparison

26 Oct **2013**

26 Oct **2012**

26 Oct **2011**



Summary of Current Conditions

- ✓ The equatorial sea surface temperatures remain are slightly below normal in Nino 3.4 region, but in normal condition.
- ✓ Arctic sea ice area is recovering, especially sea ice area in Kara and Barents seas is rapidly increasing.
- ✓ Vertical temperature profile shows slightly below normal condition over the arctic.
- ✓ Eurasian snow cover is more than normal.