Ministry of Earth Sciences
India Meteorological Department
Cyclone Warning Division, New Delhi

FDP (Cyclone) NOC Report Dated 07th December, 2021

Time of Issue: 1200 UTC

Synoptic features (based on 0900 UTC analysis):

- Yesterday's low pressure area over northwest BoB and adjoining West Bengal & Bangladesh coasts became less marked in the same evening (1200 UTC of 6th December) over the same region. However, the associated cyclonic circulation persisted and lay over West Bengal - Bangladesh coasts & adjoining northwest Bay of Bengal extending upto 1.5 km above mean sea level in the morning (0530 hours IST) of today, the 7th December. It persisted over the same region at 0900 UTC of today.
- The cyclonic circulation over East-central Arabian Sea off Maharashtra coast at 1.5 km above mean sea level persisted over the same region at 0900 UTC of today.
- The cyclonic circulation over Comorin Area became less marked at 0830 hours IST of today.

Dynamical and thermodynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) ºC	28-29°C over west-central BoB. Slightly less 26-28°C over northwest BoB. Less than 26°C off West Bengal-Bangladesh coast.	28-29°C over major parts of south and east-central AS. 26-28°C over west-central and southwest AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm^2	100-120 over south Andaman Sea, southeast BoB and adjoining Equatorial Indian Ocean. 60-80 over west-central and adjoining northwest BoB. It is becoming less than 50 over northwest BoB off north Odisha-West Bengal-Bangladesh coasts.	60-80 over southeast & parts of east-central AS. Less than 50 over major parts of west AS.
Cyclonic Relative vorticity (X10^{-6}s^{-1})	Vorticity is around 40-50 over northwest BoB & adjoining West-Bengal - Bangladesh coasts with vertical extension upto 700 hPa. Another positive zone 10-20 over Andaman Sea, Equatorial Indian Ocean & adjoining south BoB.	10-20 over east-central and adjoining southwest AS.
Low Level convergence (X10^{-}	Low level convergence is 05-10 over northeast BoB off east	Some small pockets of value 05 over southeast and another over

^{5} s^{-1})	Bangladesh coast. Another zone of 05 over central parts of south BoB).	west-central AS.
Upper Level divergence (X10^{-5} s^{-1})	Negative over entire BoB.	05-10 over east-central & adjoining southeast AS off Goa coast.
Vertical Wind Shear (VWS Knots)	Moderate (15-20) over Andaman Sea and parts of southeast & east-central BoB. High over other parts.	Low to Moderate 05-20 over southeast AS and also over west-central AS. High over remaining parts of AS.
Wind Shear Tendency (knots)	Decreasing over Andaman Sea and parts of southeast & east-central BoB.	Decreasing over southeast AS and also over west-central AS.
Upper tropospheric Ridge	Along 14°N over the central BoB.	Not well defined.

Satellite observations based on INSAT imagery (0900 UTC):

(a) Bay of Bengal:

Scattered low & medium clouds with embedded isolated moderate to intense convection lay over north and central BoB.

(b) Arabian Sea

No significant clouds over the region.

M.J.O. Index:

MJO index is currently in Phase 6 with amplitude more than 1. It will continue in same phase for next 7 days.

Storms and Depression over South China Sea/ South Indian Ocean:

No system over the area.

NWP Input for FDP Cyclone based on 0000 UTC for the next 7 days

Model	BoB	AS
IMD-GFS	No significant development is indicated.	No significant development is indicated.
IMD-GEFS	Same as above	Same as above
IMD-WRF	No significant development is indicated upto 9th Dec.	No significant development is indicated upto 9th Dec.
NCMRWF-NCUM(Global)	No significant development is indicated.	No significant development is indicated.
NCMRWF-NEPS	Similar to NCUM-G	Similar to NCUM-G
NCMRWF-UM (Regional)	No significant development is indicated upto 9th Dec.	No significant development is indicated upto 9th Dec.
ECMWF	No significant development is indicated.	No significant development is indicated.
ECMWF-EPS	No cyclogenesis / strike probability	No cyclogenesis / strike probability
NCEP-GFS	No significant development is indicated.	No Low pressure system predicted.

IMD-GPP	No potential zone.	No potential zone.

GPP- Genesis Potential Parameter based on Dynamical Statistical model developed by IMD.

Summary and Conclusion:

Based on the initial conditions of 00 UTC of today, the 6th December, there is no indication of any fresh development / cyclogenesis over the north Indian Ocean (comprising the Bay of Bengal & the Arabian Sea) during next 7 days.

It may thus be concluded that, no cyclogenesis is likely over the Bay of Bengal & the Arabian Sea during next 7 days.

Probability of cyclogenesis (formation of depression and above intensity systems) over the Bay of Bengal and Andaman Sea during next 168 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

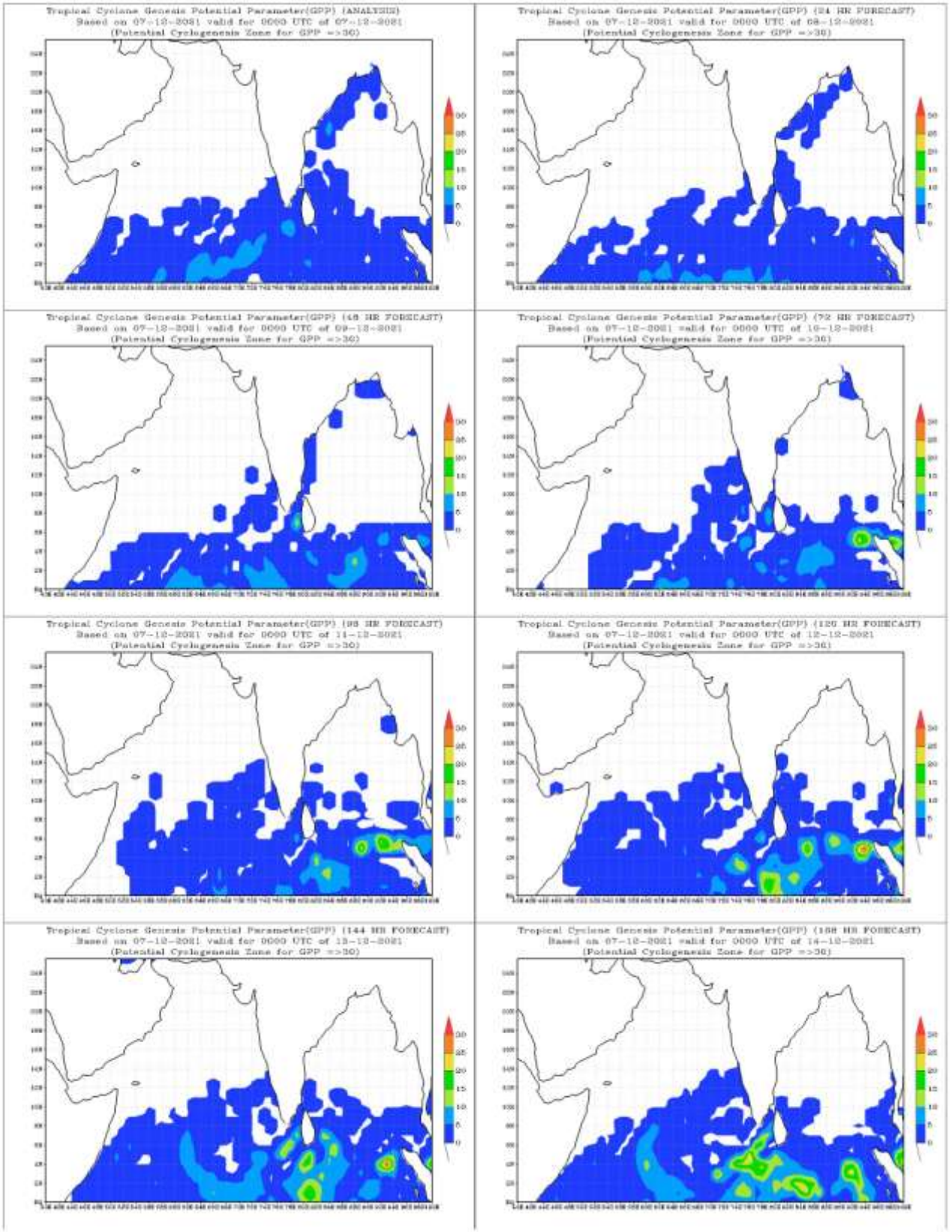
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

Advisory: NIL

No IOP is suggested.

Annexure-I


Tropical Cyclone Genesis Potential Parameter(GPP) (ANALYSIS)
Based on 07-12-2021 valid for 0000 UTC of 07-12-2021
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (24 HR FORECAST)
Based on 07-12-2021 valid for 0000 UTC of 08-12-2021
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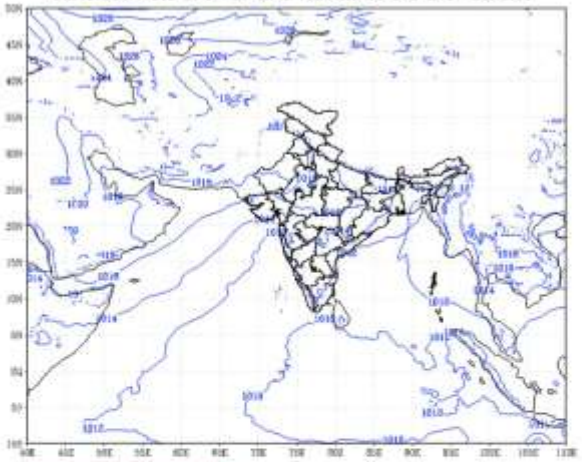
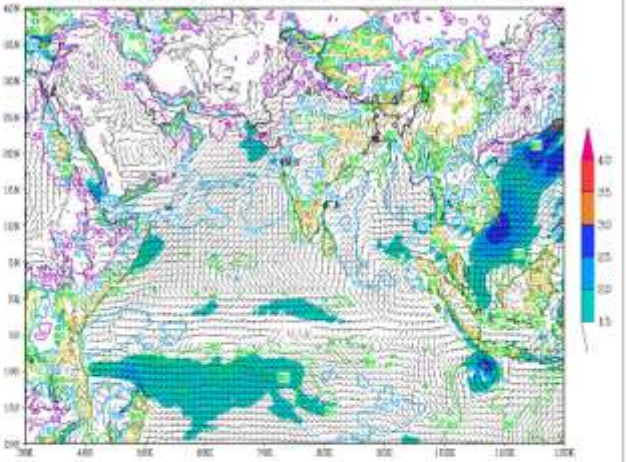
Tropical Cyclone Genesis Potential Parameter(GPP) (168 HR FORECAST)
Based on 07-12-2021 valid for 0000 UTC of 14-12-2021
(Potential Cyclogenesis Zone for GPP =>30)

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 07-12-2021



IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 07-12-2021



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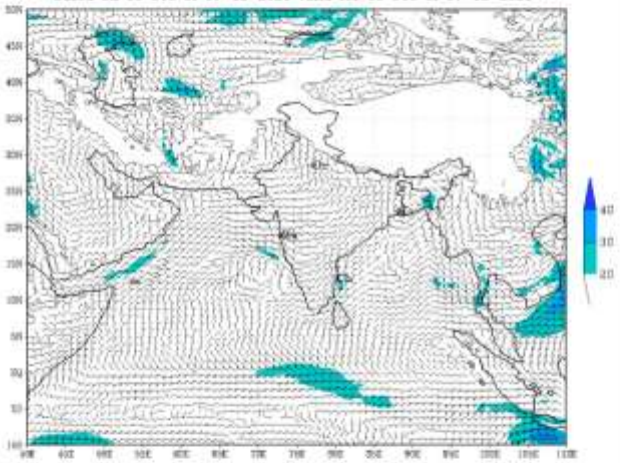

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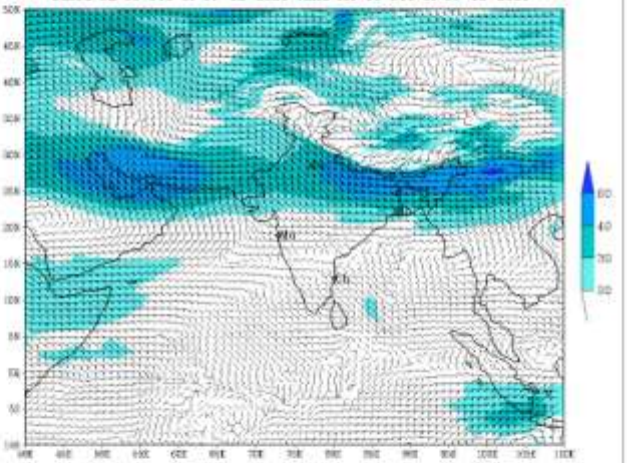

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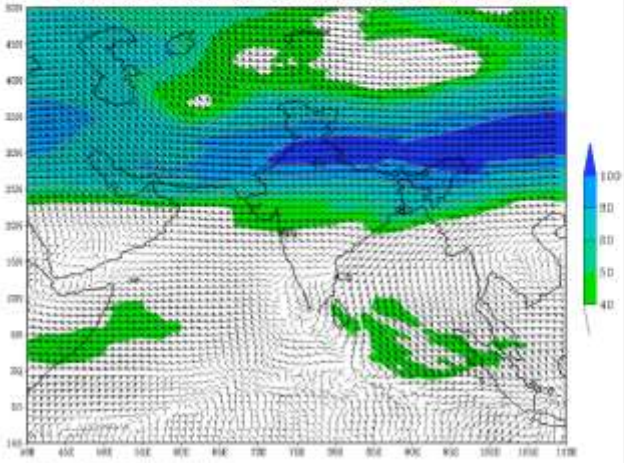

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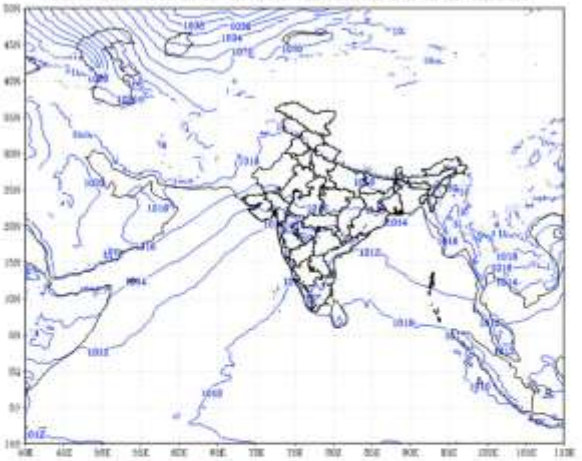

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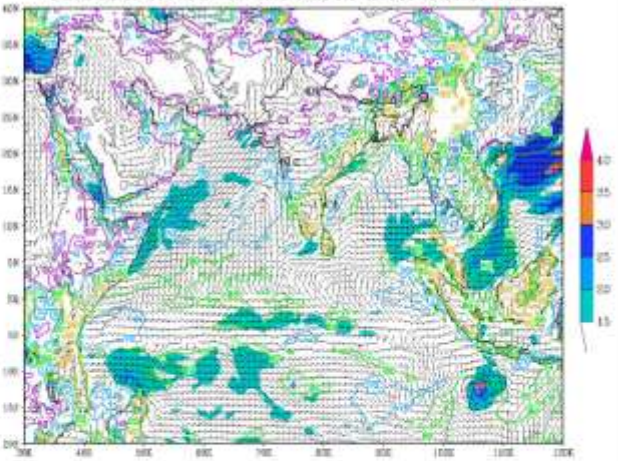

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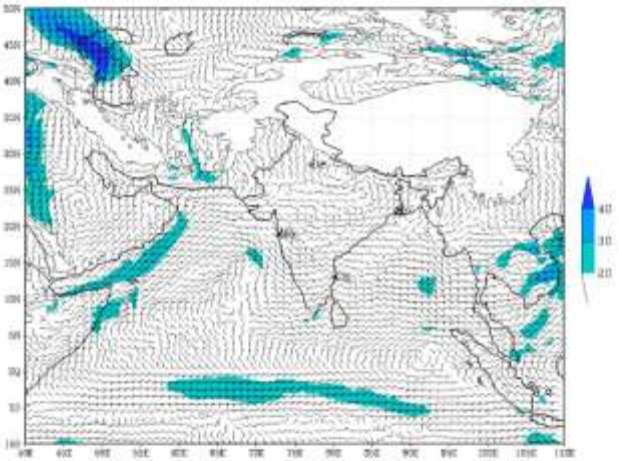

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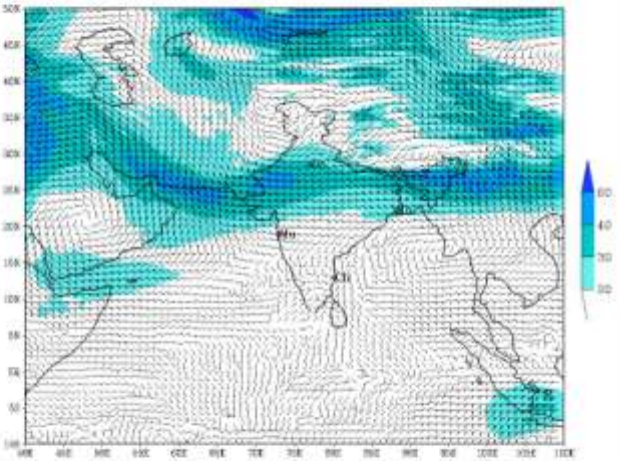

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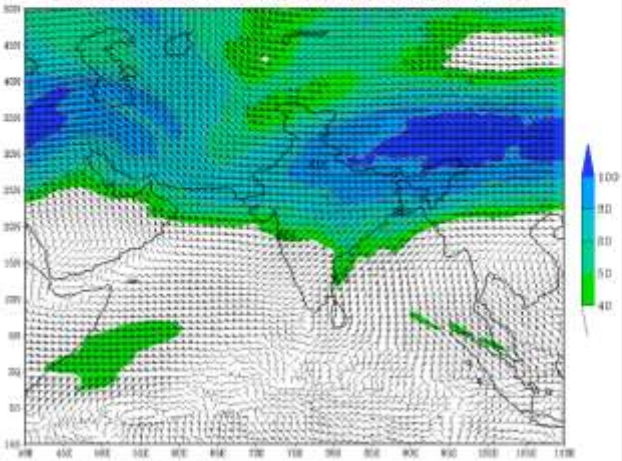

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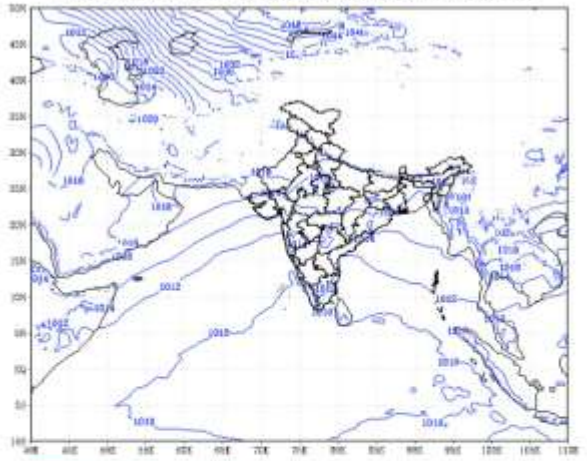

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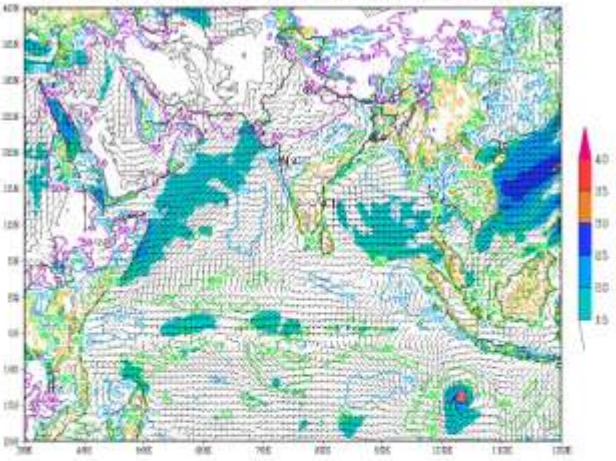

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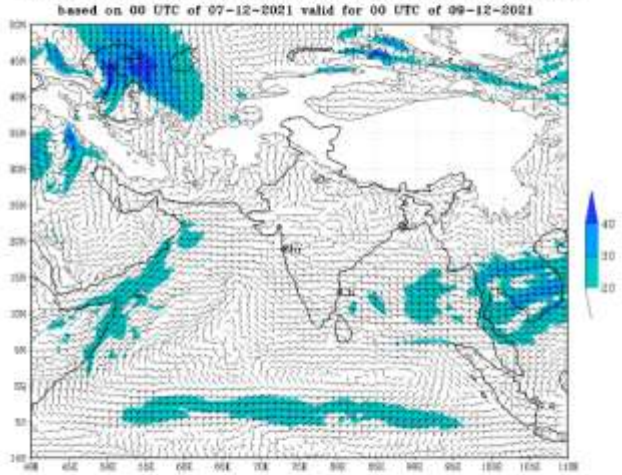

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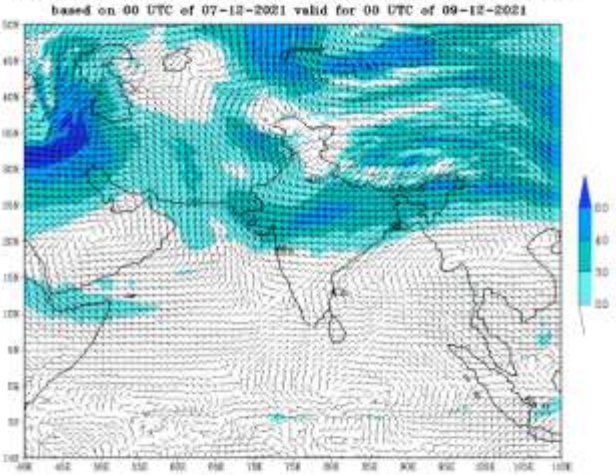

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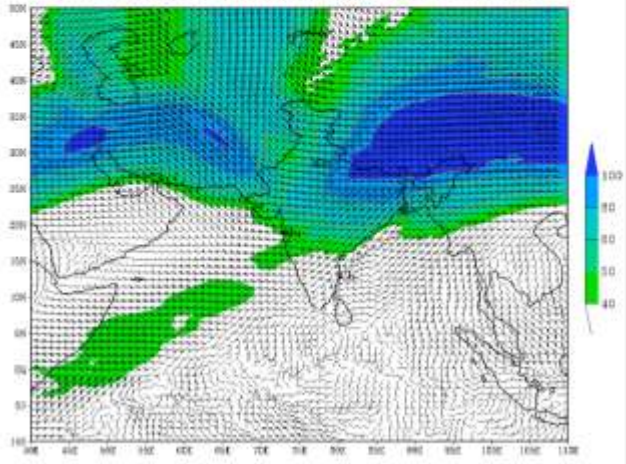

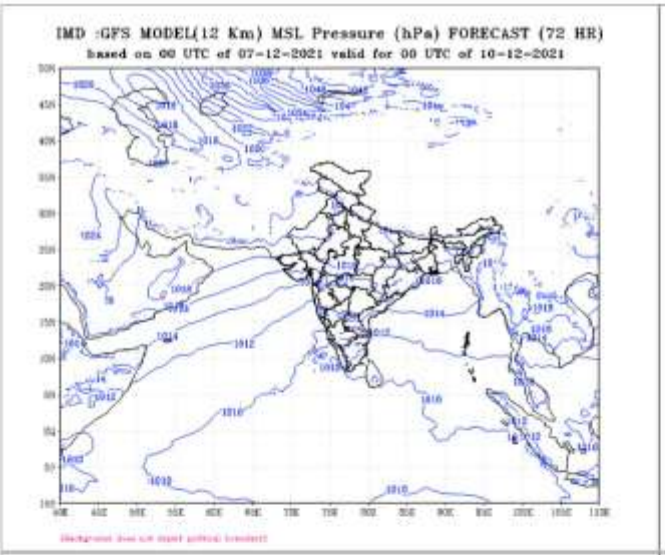
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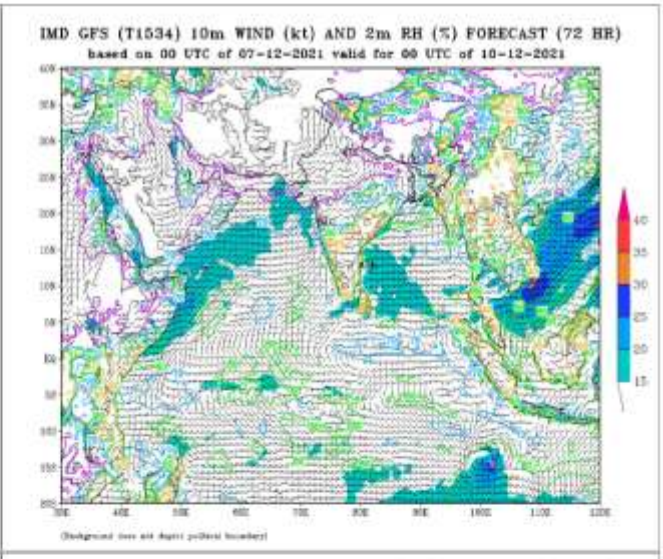
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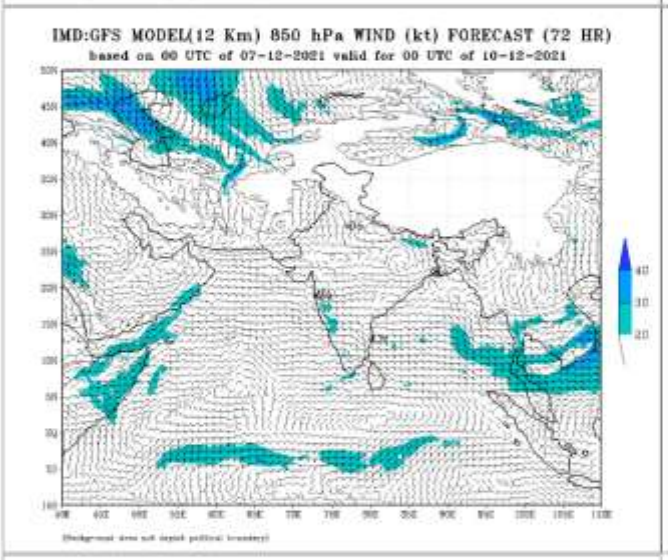
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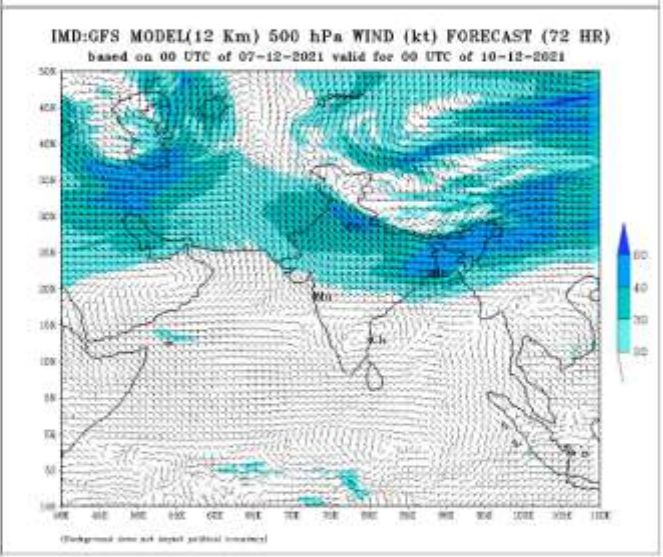
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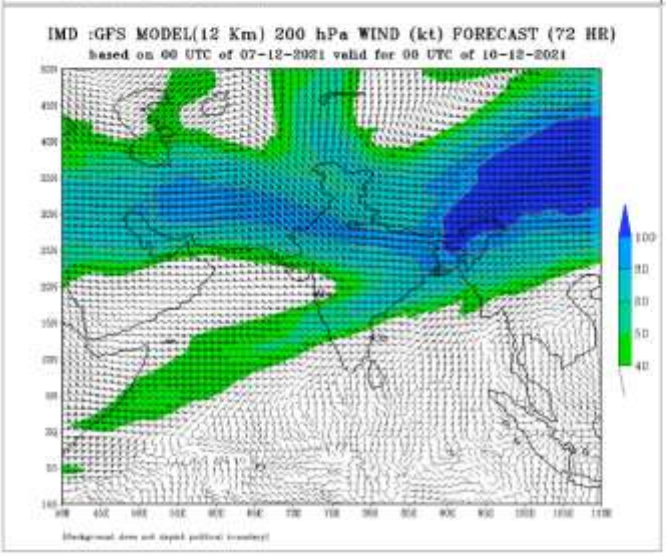
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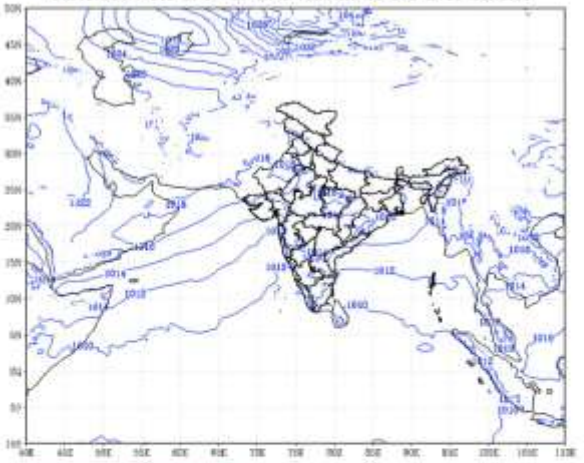

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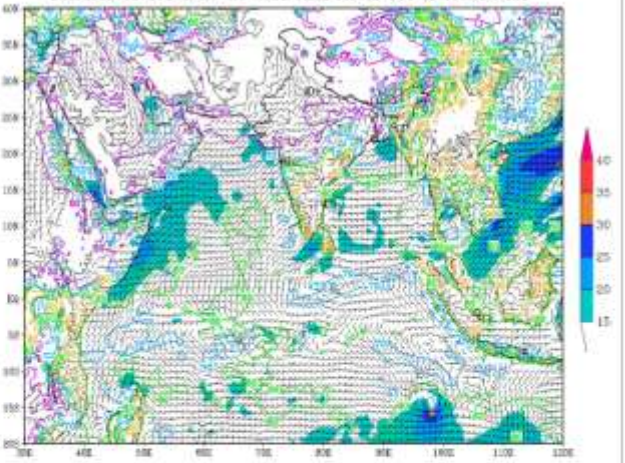

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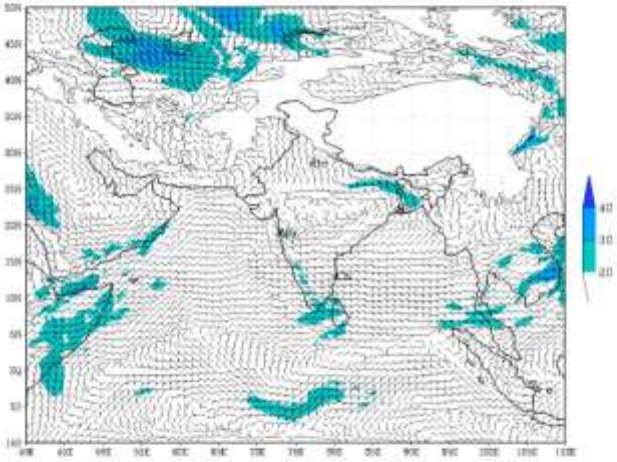

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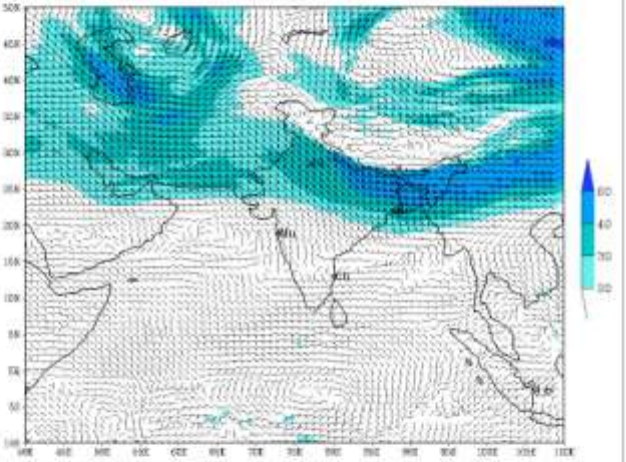

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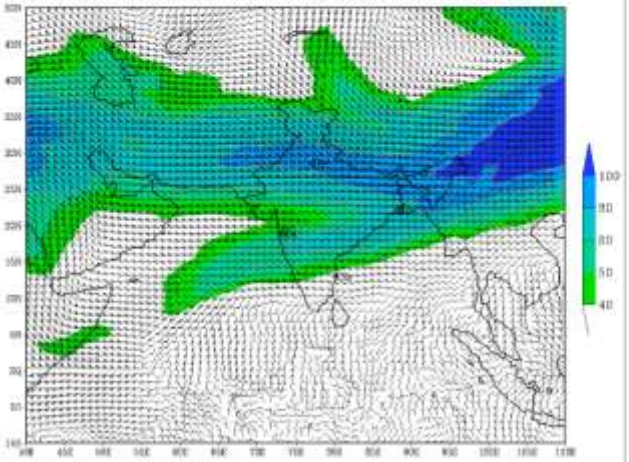

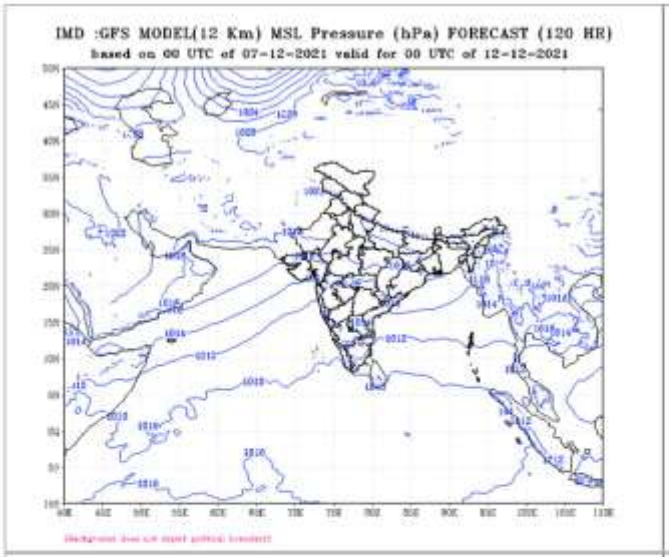
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (120 HR)
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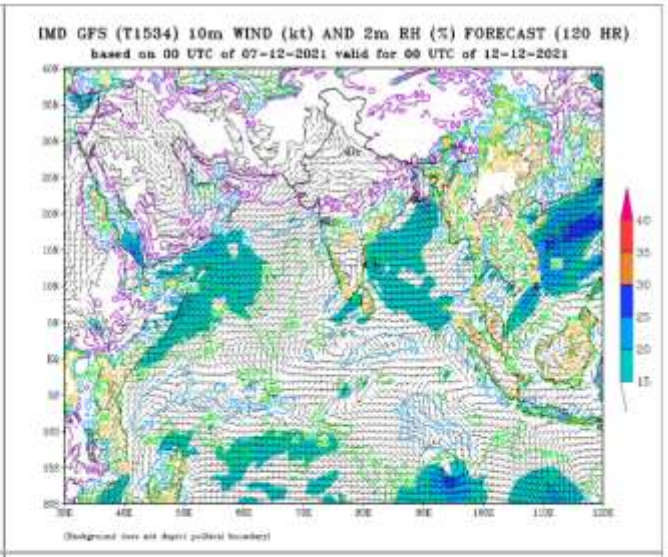
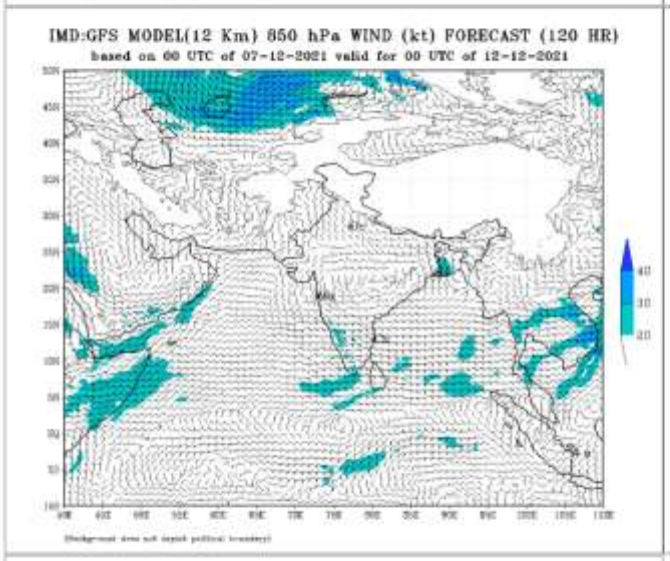

IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (120 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 12-12-2021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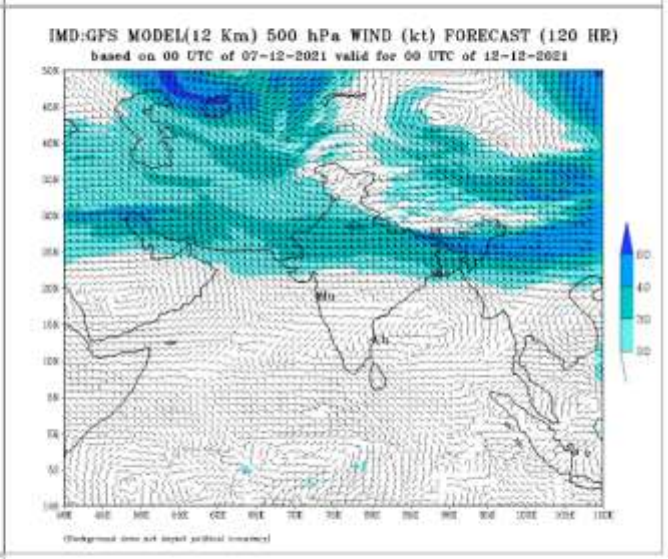
based on 00 UTC of 07-12-2021 valid for 00 UTC of 12-12-2021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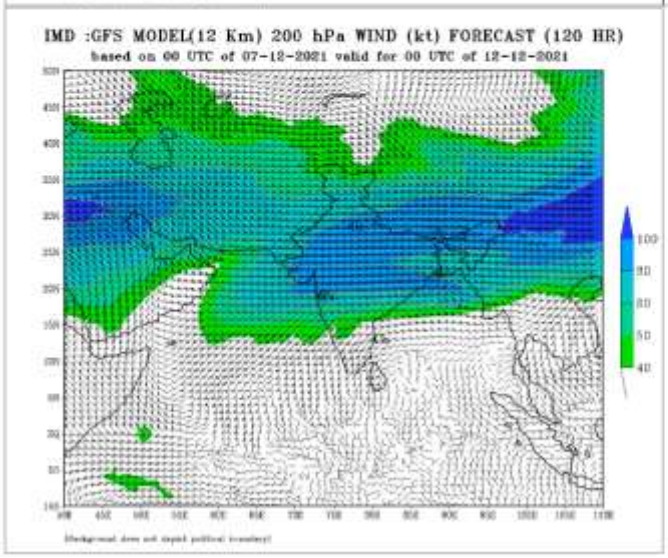
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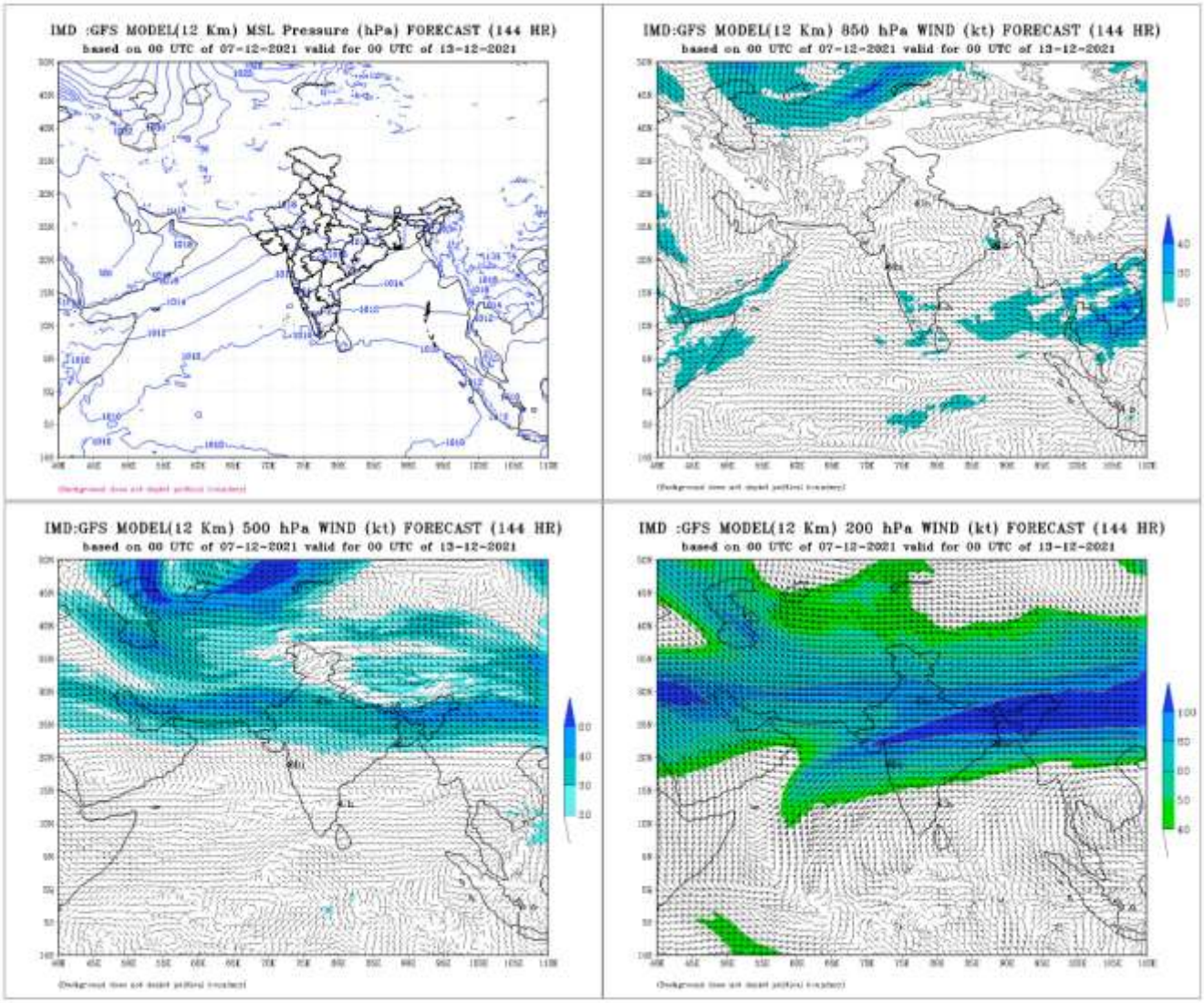
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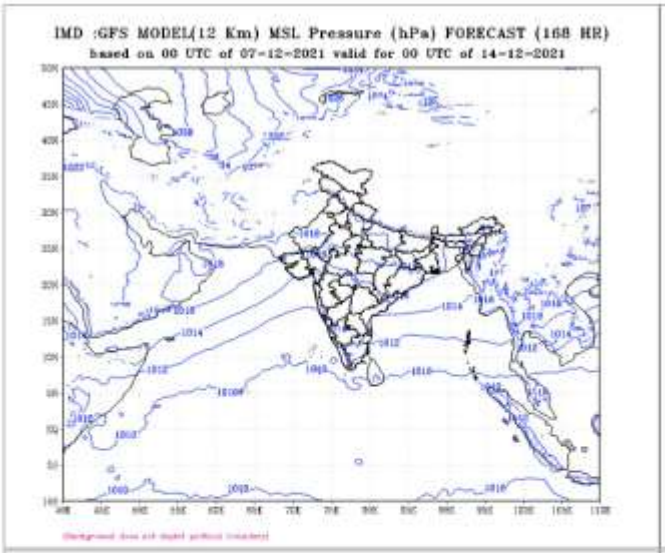
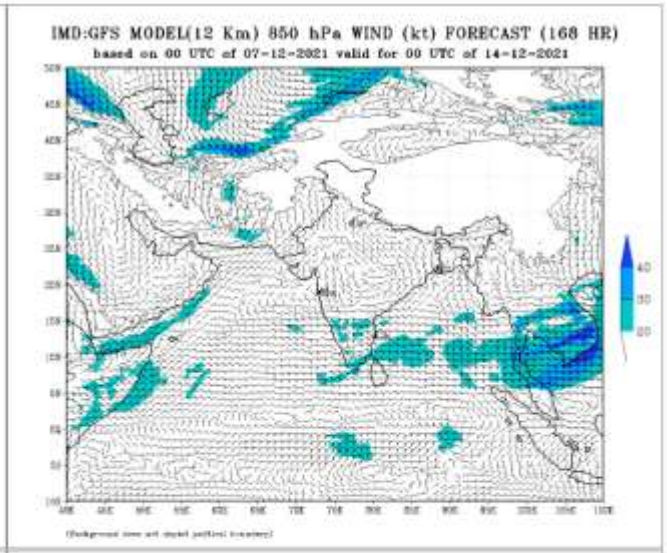
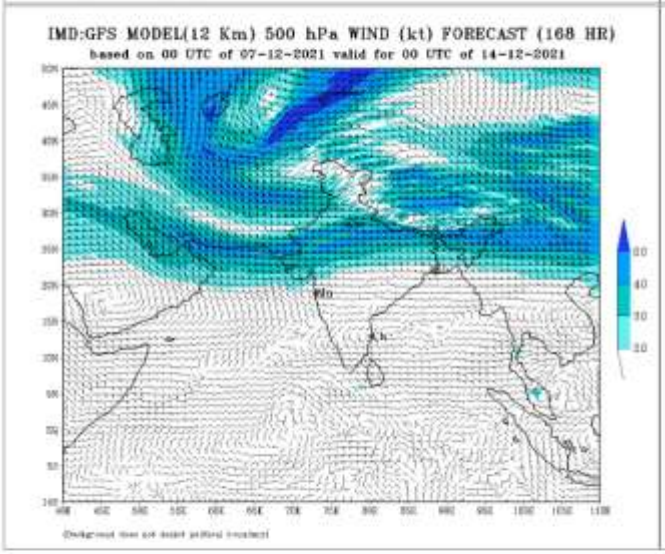
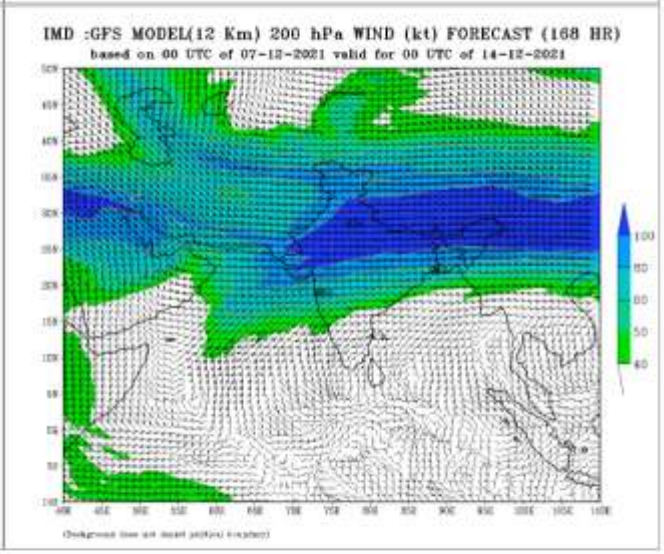

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (168 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 14-12-2021


IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 14-12-2021


IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 14-12-2021


IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 07-12-2021 valid for 00 UTC of 14-12-2021