



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

**Tropical Cyclone Forecast Programme
Report Dated 30th October, 2023**

Time of Issue: 1200 UTC

Synoptic features (based on 0300 UTC analysis):

- A cyclonic circulation lies over Sri Lanka & adjoining Comorin area at 0.9 km above mean sea level.
- An upper air cyclonic circulation extending upto mid-tropospheric levels lay over Southwest Arabian Sea at 0300 UTC and persisted over the same region at 0900 UTC of today, the 30th October. Under it's influence, the cloud mass is organizing over the southwest Arabian Sea.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	29-30°C over major parts of BoB, Andaman Sea, 26-28 over some parts of southwest BoB and Gulf of Mannar,	29-30°C over southeast and adjoining eastcentral AS, north AS, along and off south Gujarat, Maharashtra, Goa, coasts, 26-28°C over central and southwest AS, less than 24°C along and off Yemen-Oman coast, Somalia coast.
Tropical Cyclone Heat Potential (TCHP) kJ/cm ²	100-120 over eastcentral BoB adjoining southeast BoB. 50-60 over most parts of BOB and north Andaman Sea, 80-90 over south Andaman Sea. Less than 40 along Andhra Pradesh and Tamil Nadu coasts, adjoining sea areas, less than 20-30 over Gulf of Mannar and adjoining Comorin area, parts of southwest BoB.	60-80 over southeast and adjoining eastcentral and adjoining southwest AS, Less than 20 over eastcentral and adjoining northeast and northwest AS, along and off Kerala, Karnataka and north Gujarat coasts, less than 10 over westcentral and southwest AS.
Cyclonic Relative vorticity (X10 ⁻⁶ s ⁻¹)	10-20 over south and adjoining central BoB, north BoB, vorticity of 70 over north Andaman Sea is seen at 500 hPa level.	30-40 over some parts of southwest AS, 10-25 over some parts of central and north AS, along and off Karnataka and north Kerala coast.
Low Level convergence (X10 ⁻⁵ s ⁻¹)	5 over the few parts of southwest BoB, -5 over westcentral BoB.	-5 over southwest AS, -5 to -10 over southeast AS, eastcentral AS.

Upper Level divergence (X10⁻⁵ s⁻¹)	5-10 over southwest BoB along and off Sri Lanka coast, Gulf of Mannar, -5-10 over westcentral BoB.	10-20 over most parts of south AS, 30 over southcentral parts of south AS, -5 to -10 over northcentral parts of south AS and adjoining central AS, -5 to -10 over eastcentral AS, 5-10 over northeast AS.
Vertical Wind Shear (VWS knots)	5-10 over most parts of south BoB, 20 over north parts of south BoB, 25-30 over central BoB, 30-35 over north BoB.	5-10 over most parts of south AS, 20 over north parts of south AS, 25-50 over central AS, 55-60 over north AS.
Wind Shear Tendency (knots)	Decreasing tendency over south and adjoining central BoB, westcentral and adjoining northwest BoB, Gulf of Mannar. Increasing over Comorin area, north BoB.	Decreasing tendency over south AS. Increasing tendency over the central and north AS.
Upper tropospheric Ridge	Along 12°N over BoB	Along 11°N over AS.

Satellite observations based on INSAT imagery (0300 UTC):

(a) Over the BoB & Andaman Sea:-

Scattered low and medium clouds with embedded moderate to intense convection lay over southwest & westcentral Bay of Bengal and Andaman Sea.

(b) Over the Arabian Sea:-

Scattered low and medium clouds with embedded intense to very intense convection lay over south Arabian Sea. Scattered low and medium clouds with embedded moderate to intense convection over central Arabian Sea.

(c) Convection outside India:

Scattered low/med clouds with embedded moderate to intense convection lay over north Sri Lanka, Gulf of Mannar, Palk Strait, Maldives, Tibet, China, S Myanmar, Thailand, Gulf of Thailand, Cambodia, Laos, Vietnam, Sumatra, Strait of Malacca, Malaysia, Borneo, south China Sea, Philippines, Madagascar and over Indian ocean between lat 5.0N to 5.0S long 48.0E to 100.0E and between lat 10.0S to 35.0S long 60.0E to 80.0E.

M.J.O. Index:

MJO index is currently in Phase 1 with amplitude greater than 1, it will remain in same phase for next 2 days with amplitude greater than 1. After that, It will remain in phase 1 for next four days but with amplitude less than 1.

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

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

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	No significant system.	An extended cyclonic circulation over southwest Arabian Sea on 30 th becoming less marked thereafter.
IMD-GEFS	No significant system.	No significant system.
IMD-WRF	No significant system.	An extended cyclonic circulation over southwest Arabian Sea on 30 th becoming less marked thereafter.

NCMRWF-NCUM	No significant system.	A cyclonic circulation over southwest Arabian Sea on 30 th with gradual westward movement towards Somalia coast.
NCMRWF-NEPS	No significant system.	No significant system.
NCMRWF-UM (Regional)	No significant system.	No significant system.
ECMWF	No significant system.	A cyclonic circulation over southwest Arabian Sea on 30 th with gradual westward movement towards Somalia coast.
ECMM	No significant system.	Moderate (30-60%) probability of formation of depression over southwest Arabian Sea on 30 th & 31 st .
NCEP-GFS	No significant system.	No significant system.
IMD-Genesis Potential Parameter	No potential zone over Bay of Bengal for next 7 days.	No potential zone over Arabian Sea for next 7 days.

Summary and conclusion:

1. For the Bay of Bengal:

Most of the models are indicating that there will be no significant system over Bay of Bengal for the next seven days.

Probability of Cyclogenesis (formation of depression and above intensity systems) over the Bay of 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

2. For the Arabian Sea:

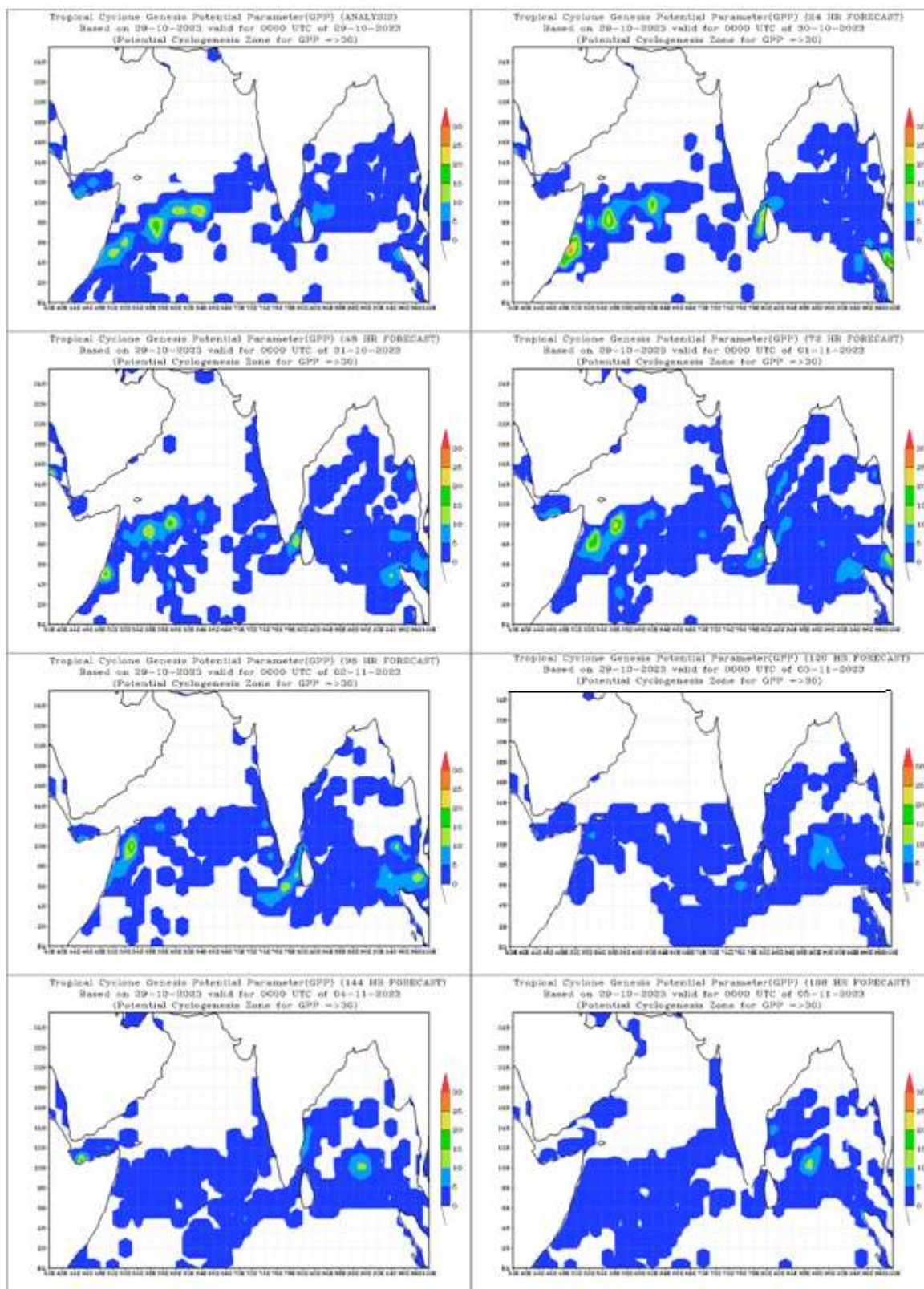
Models like ECMWF, IMD GFS, NCUM and ECMM are indicating a cyclonic circulation over southwest Arabian Sea on 30th/31st with gradual westwards movement towards Somalia coast and no further intensification.

Thus, current features indicate that an upper air cyclonic circulation extending upto mid-tropospheric levels lies over Southwest Arabian Sea. Under it's influence, the cloud mass is organizing over the southwest Arabian Sea close to Somalia coast. The system is under continuous watch. However, probability of cyclogenesis may be taken as NIL for next 7 days.

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

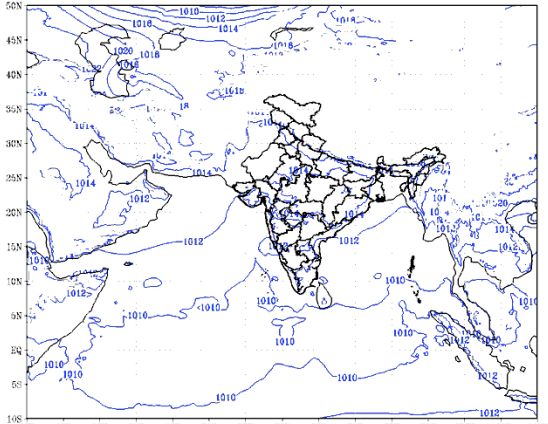
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

IOP: Somalia coast on 30th and 31st October.



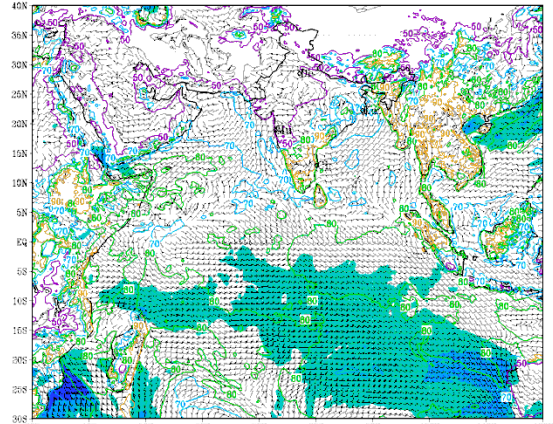
Please be noted that 29th October based GPP plots are shown above as, the 30th October based GPP Data is not available.

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
 based on 00 UTC of 30-10-2023 valid for 00 UTC of 30-10-2023



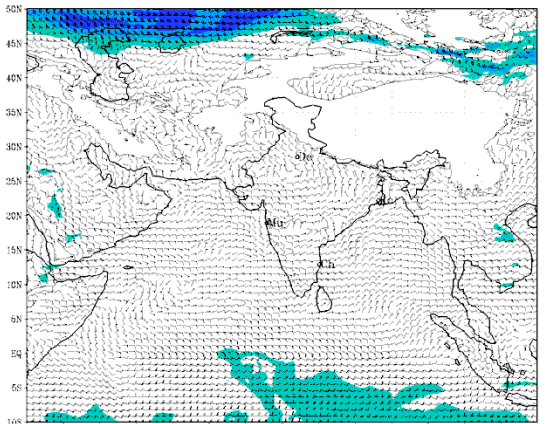
(Background does not depict political boundary)

IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
 based on 00 UTC of 30-10-2023 valid for 00 UTC of 30-10-2023



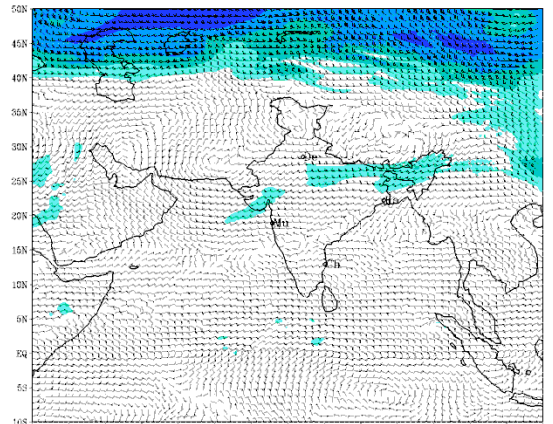
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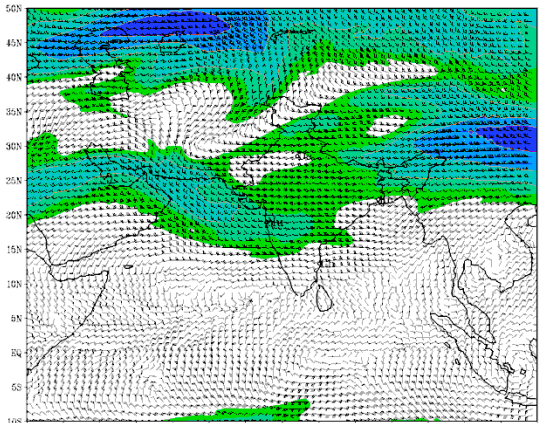
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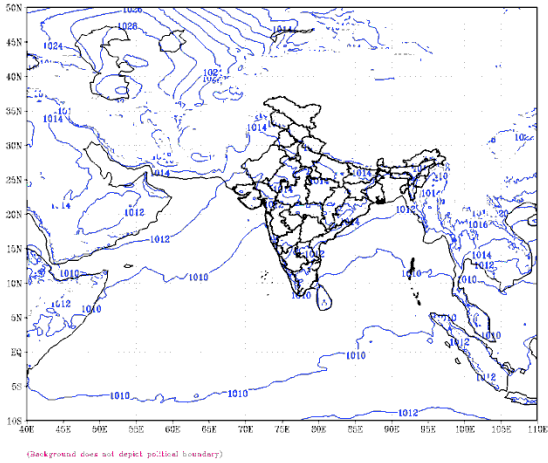
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 based on 00 UTC of 30-10-2023 valid for 00 UTC of 30-10-2023

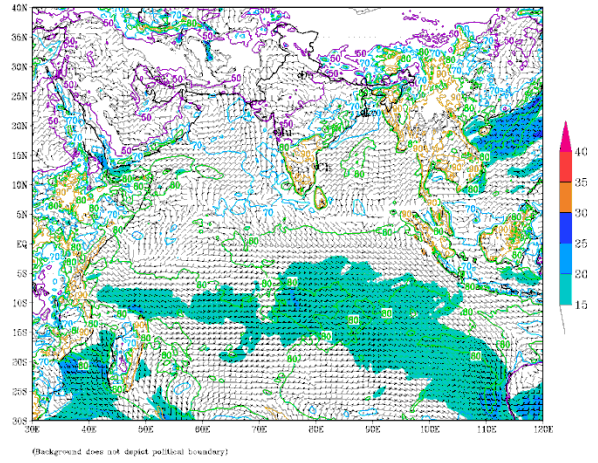


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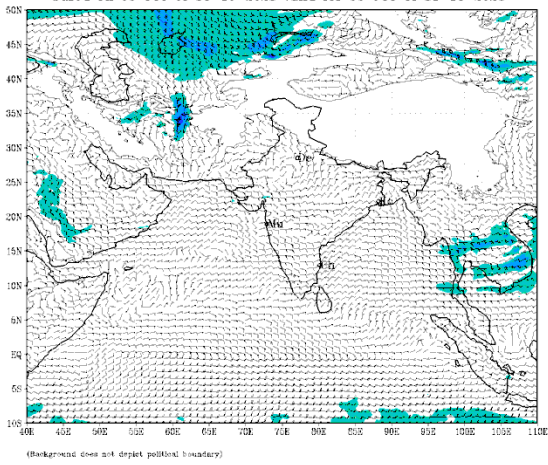
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 31-10-2023



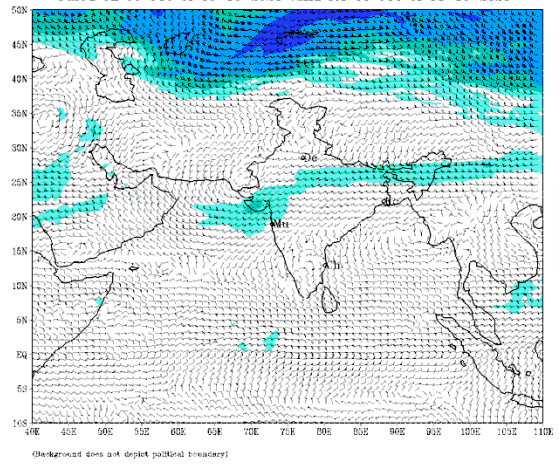
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (24 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 31-10-2023



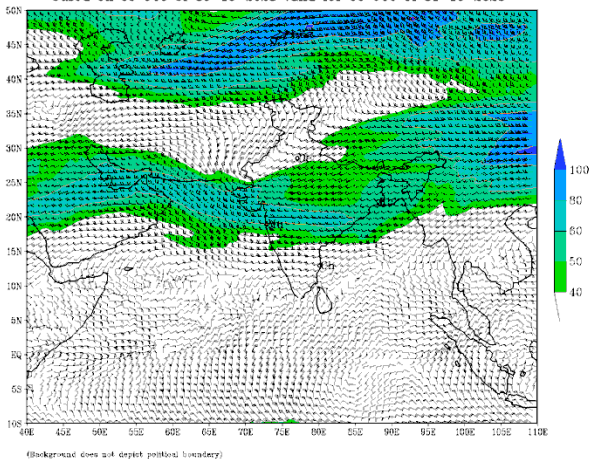
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 31-10-2023



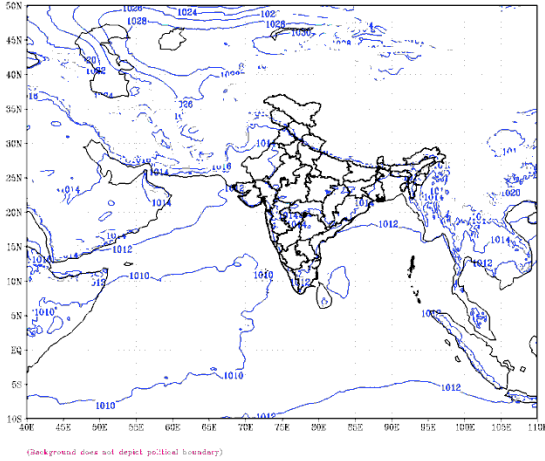
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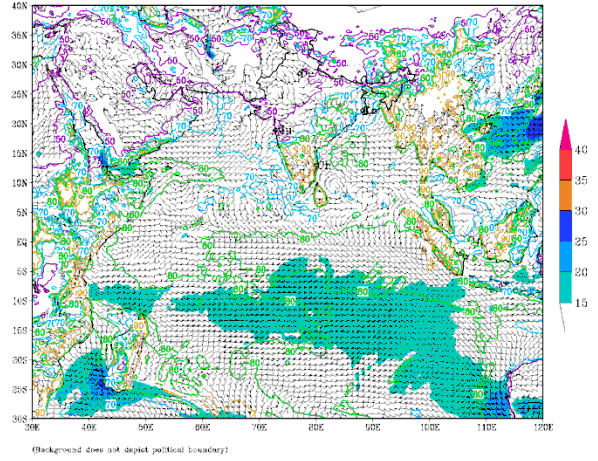
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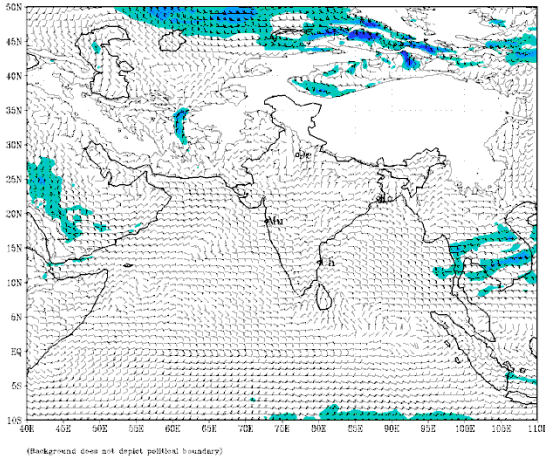
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 01-11-2023



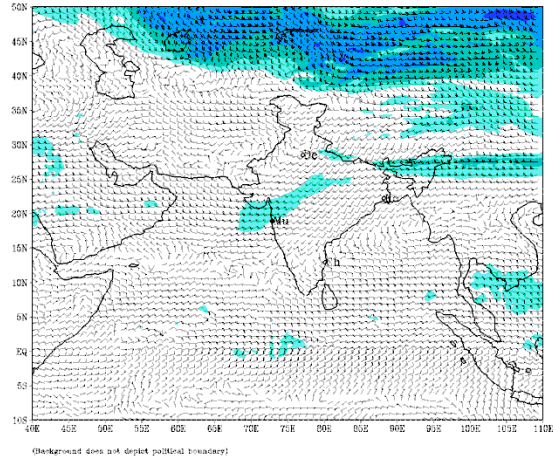
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (48 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 01-11-2023



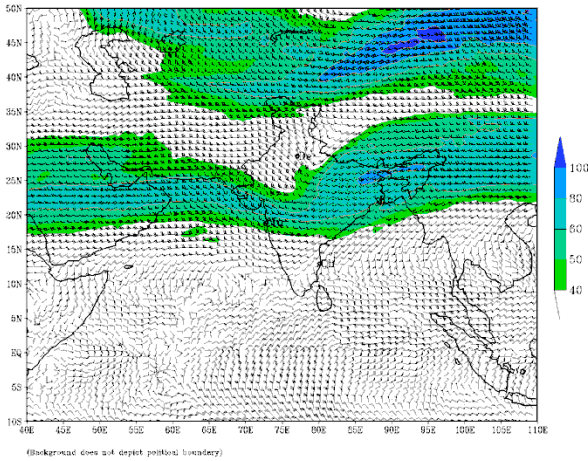
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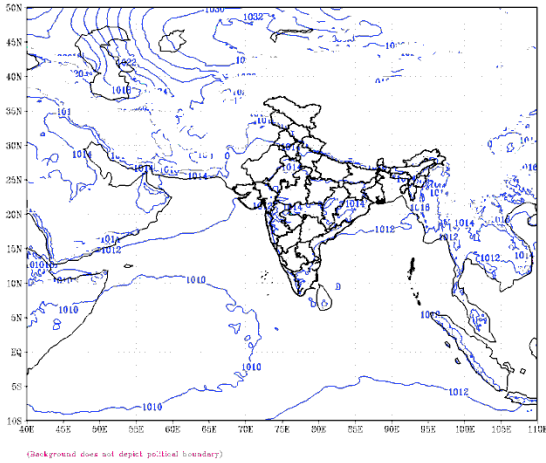
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 01-11-2023



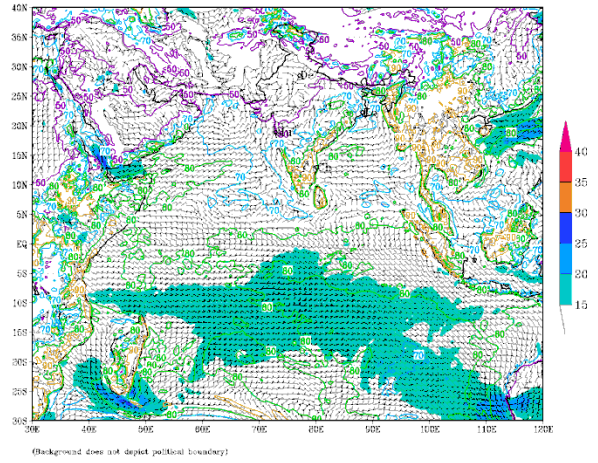
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 01-11-2023



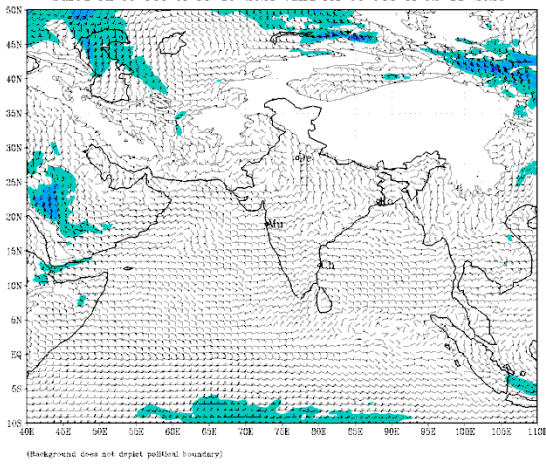
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 based on 00 UTC of 30-10-2023 valid for 00 UTC of 02-11-2023



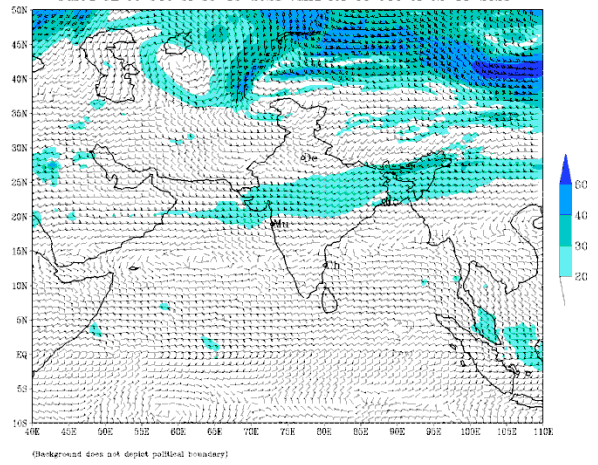
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (72 HR)
 based on 00 UTC of 30-10-2023 valid for 00 UTC of 02-11-2023



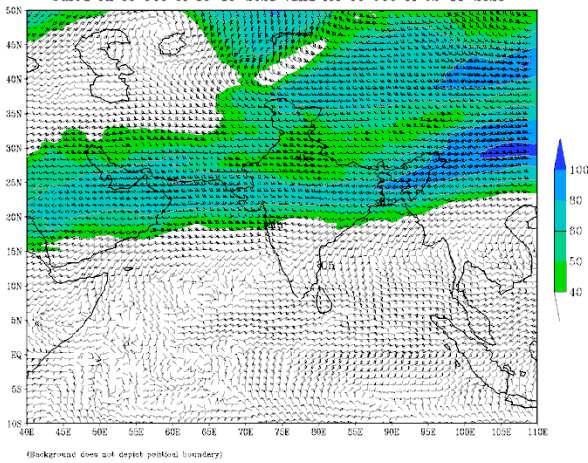
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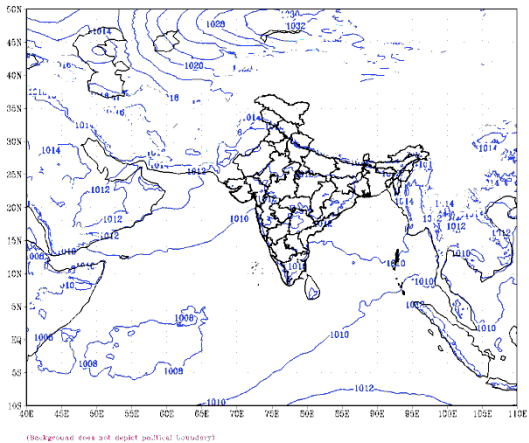
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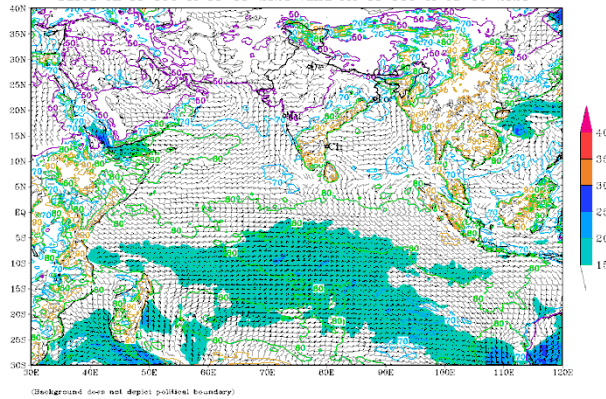
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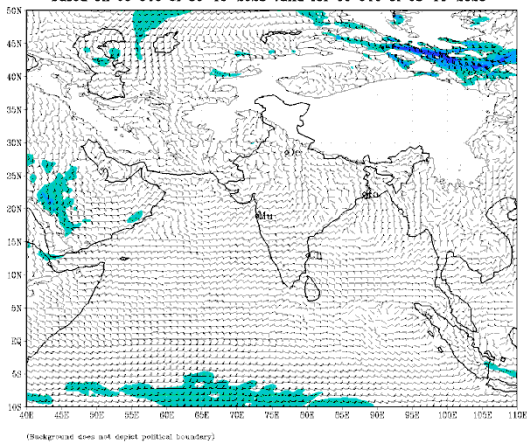
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 03-11-2023



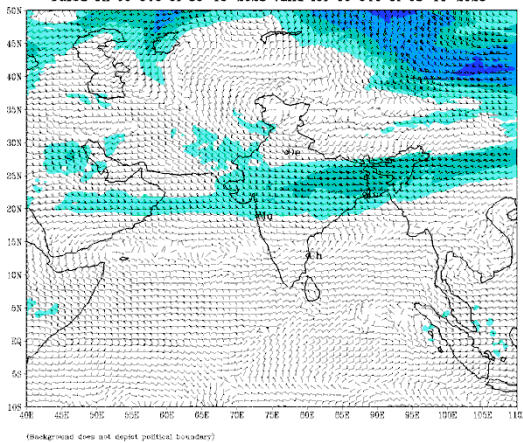
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (96 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 03-11-2023



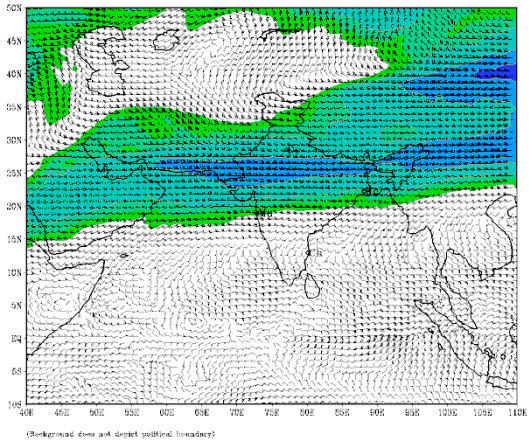
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 03-11-2023



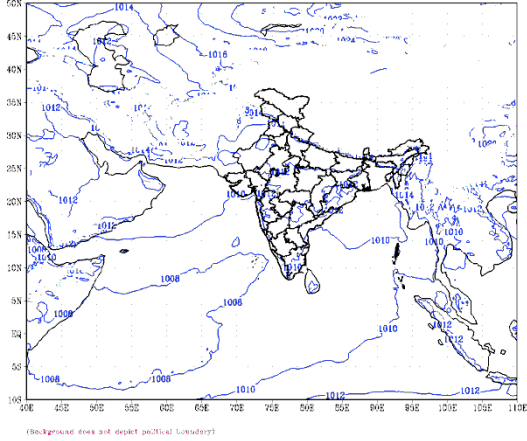
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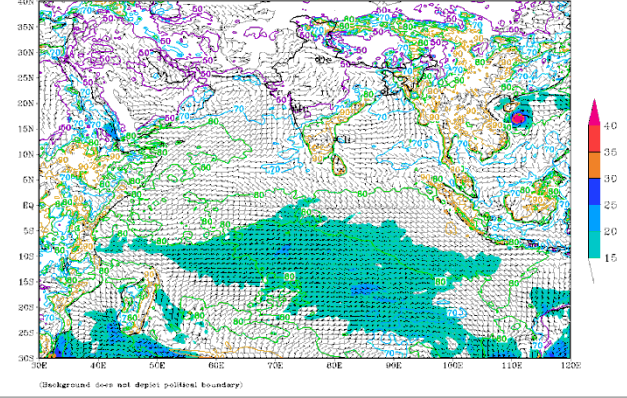
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 03-11-2023



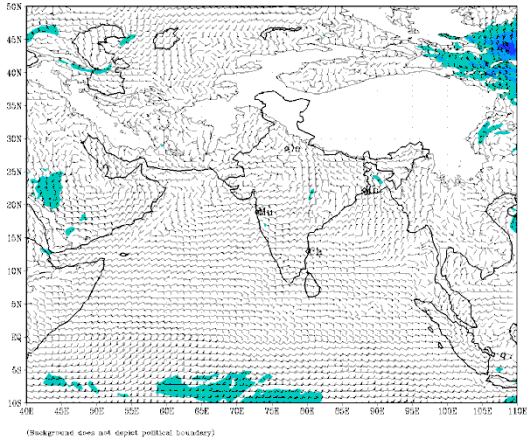
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 04-11-2023



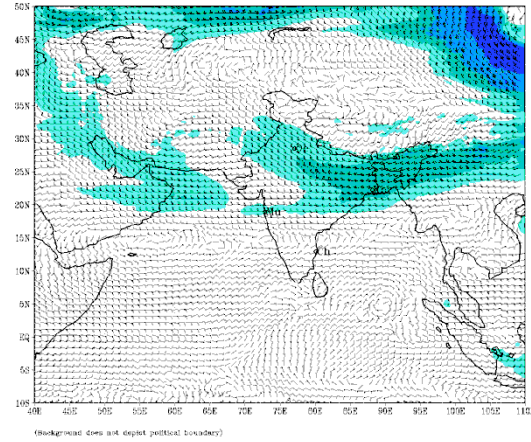
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (120 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 04-11-2023



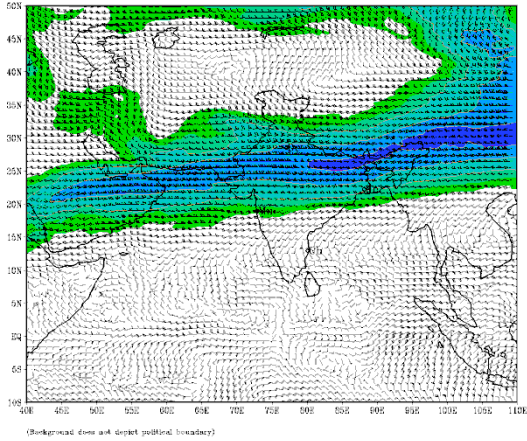
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 04-11-2023



IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (120 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 04-11-2023



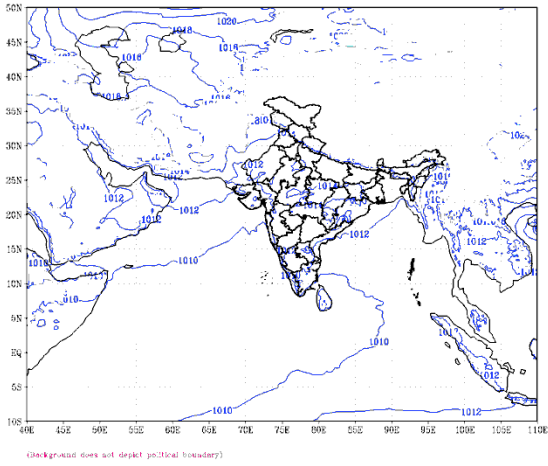
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 04-11-2023



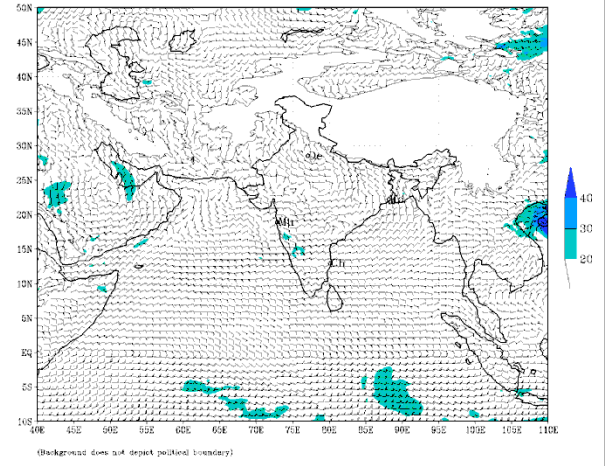
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 04-11-2023



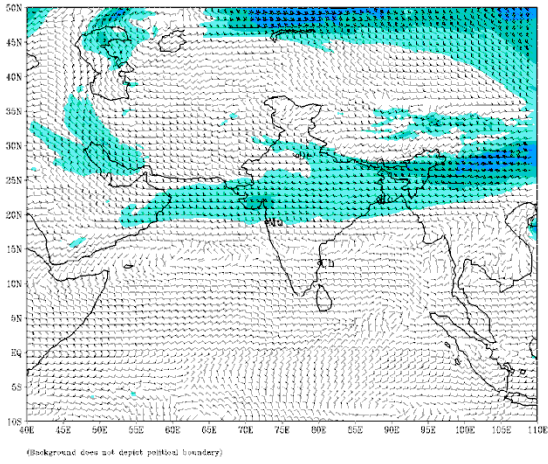
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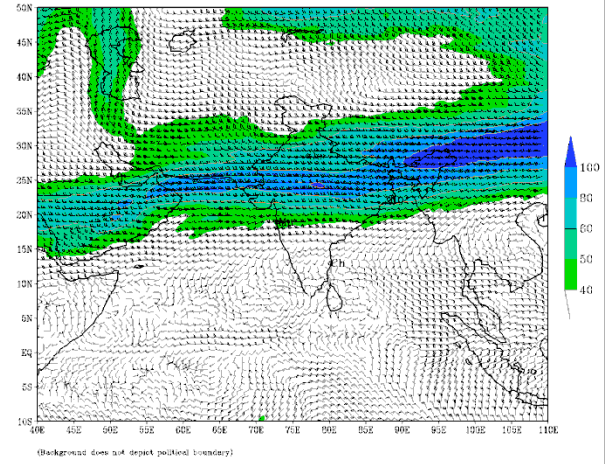
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based on 00 UTC of 30-10-2023 valid for 00 UTC of 05-11-2023



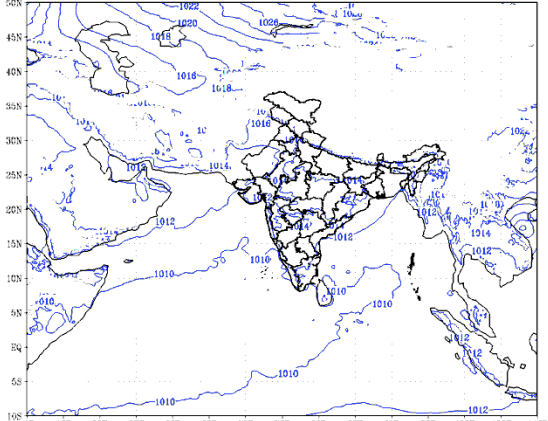
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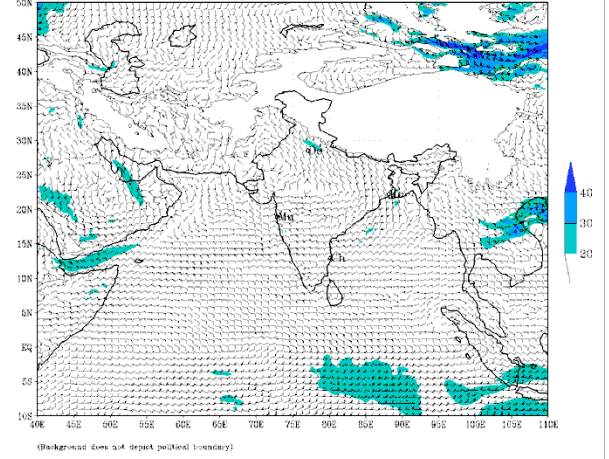
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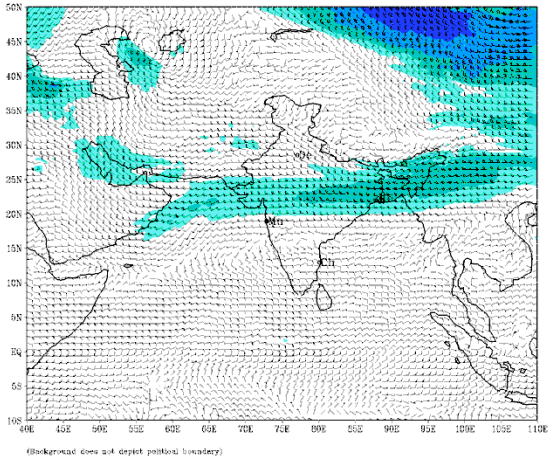
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IMD :GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 30-10-2023 valid for 00 UTC of 06-11-2023

