# Global Tropics Hazards And Benefits Outlook

04/09/2019

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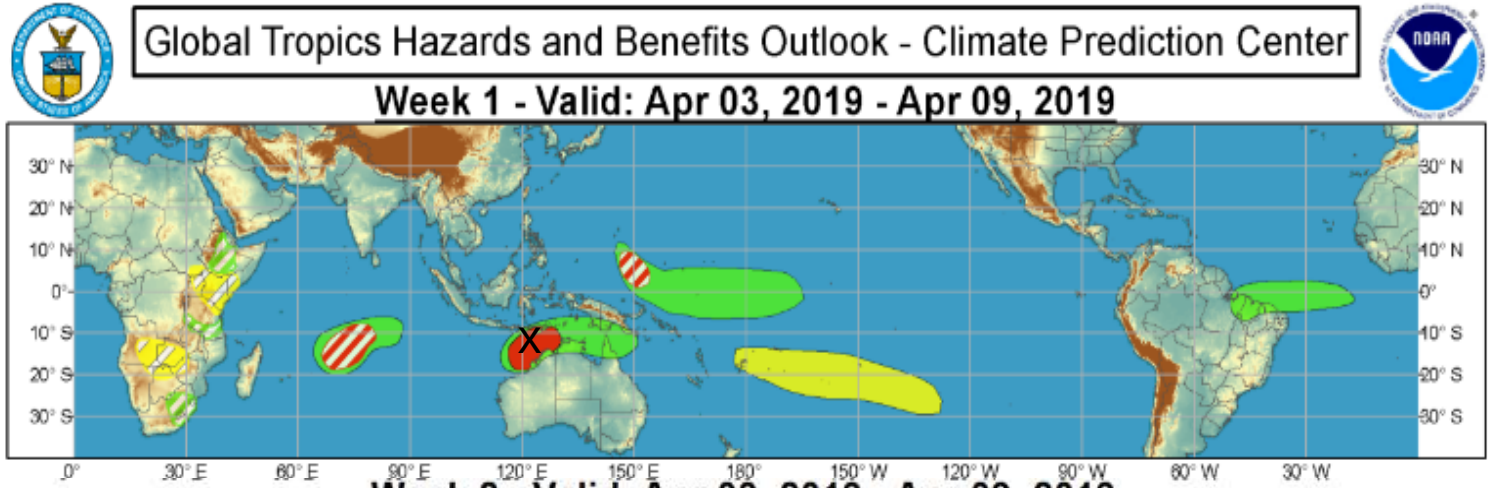
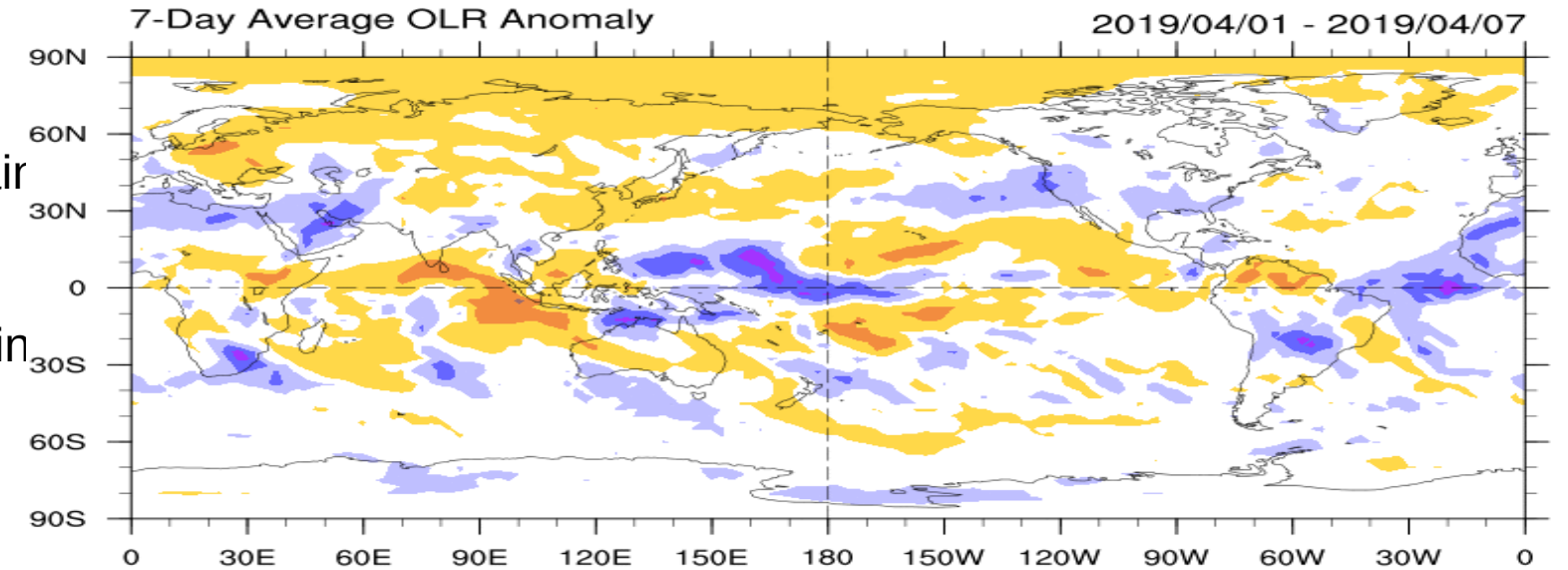
## Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review




Cool shading
More clouds/rain

Warm shading
Less clouds/rain

# Synopsis of Climate Modes

**ENSO: (March 14, 2019)**

- ENSO Alert System Status: El Niño Advisory

- Weak El Nino conditions are likely to continue through the Northern Hemisphere spring 2019 (~80% chance) and summer (~60% chance)

- Update scheduled for Thursday, April 11

**MJO and other subseasonal tropical variability:**

• The MJO has remained disorganized since late March.

• Model solutions indicate that the MJO may become more organized across the Indian Ocean during Week-2.

**Extratropics:**

• The MJO is unlikely to play a role in any tropical-extratropical interactions.

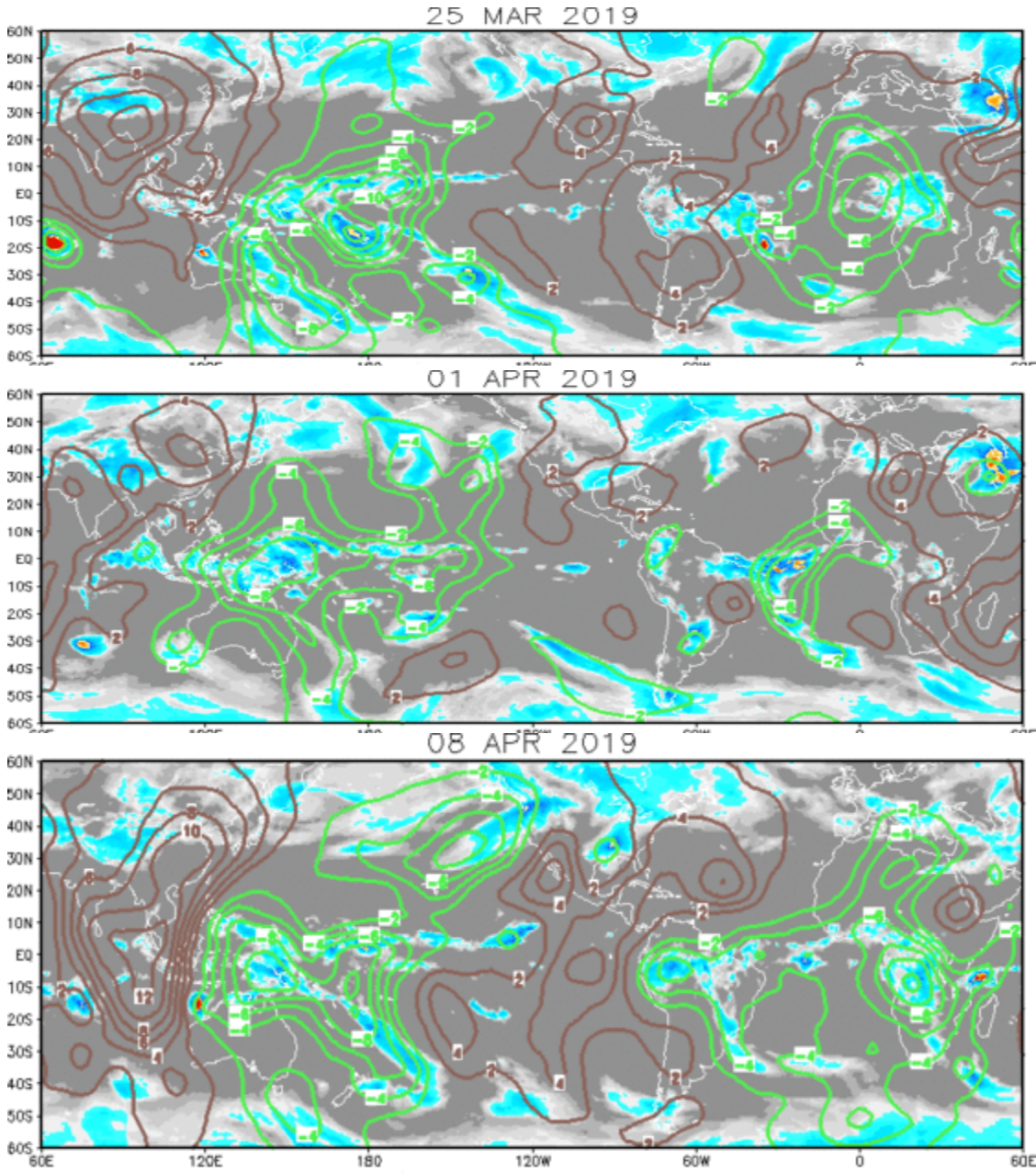
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence  Brown: Enhanced Convergence

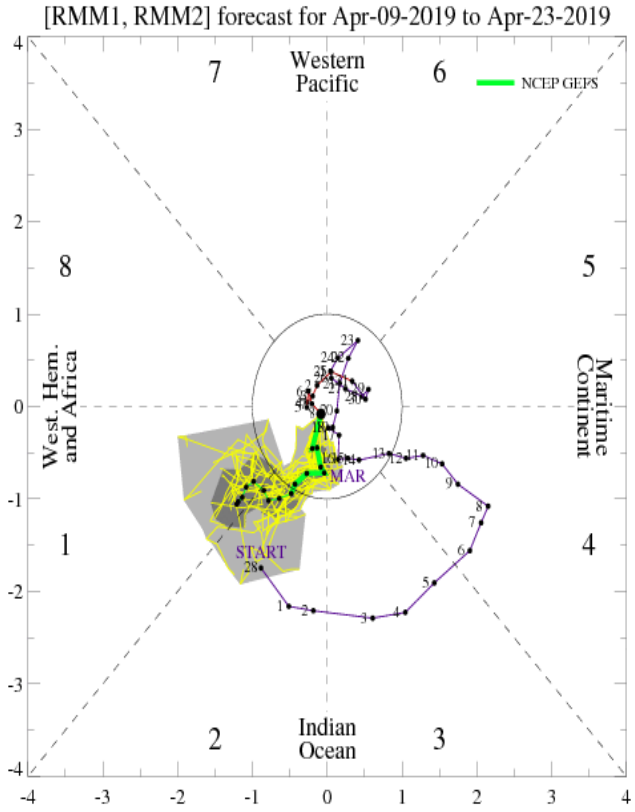
The convective regions are anchored by low-frequency, Kelvin, and ER waves throughout the tropics.

By the beginning of April, pattern of anomalous convection became less coherent with enhanced convection associated with El Nino most dominant.

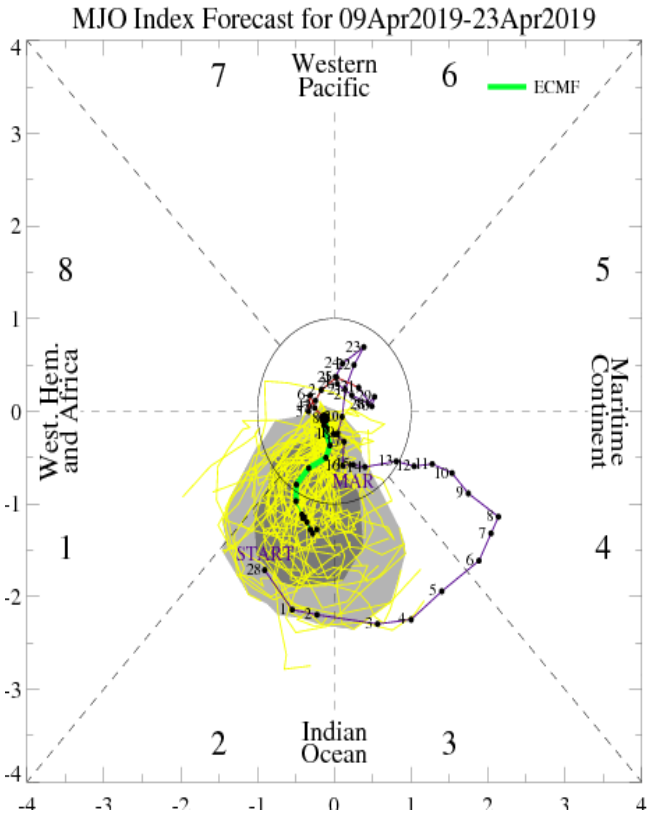
Two areas of enhanced convection (El Nino and perhaps a precursor to a re-emergence of the MJO over Africa)



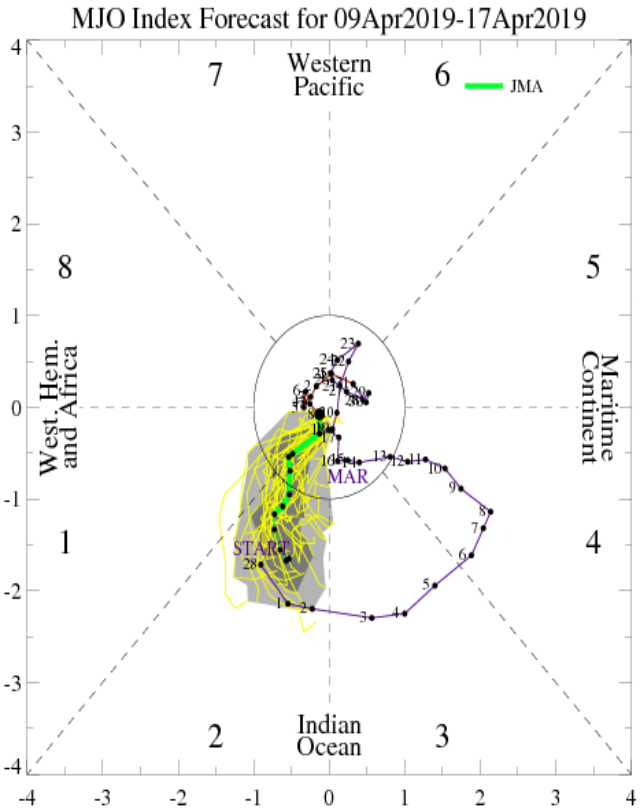
# MJO Observation/Forecast




GEFS



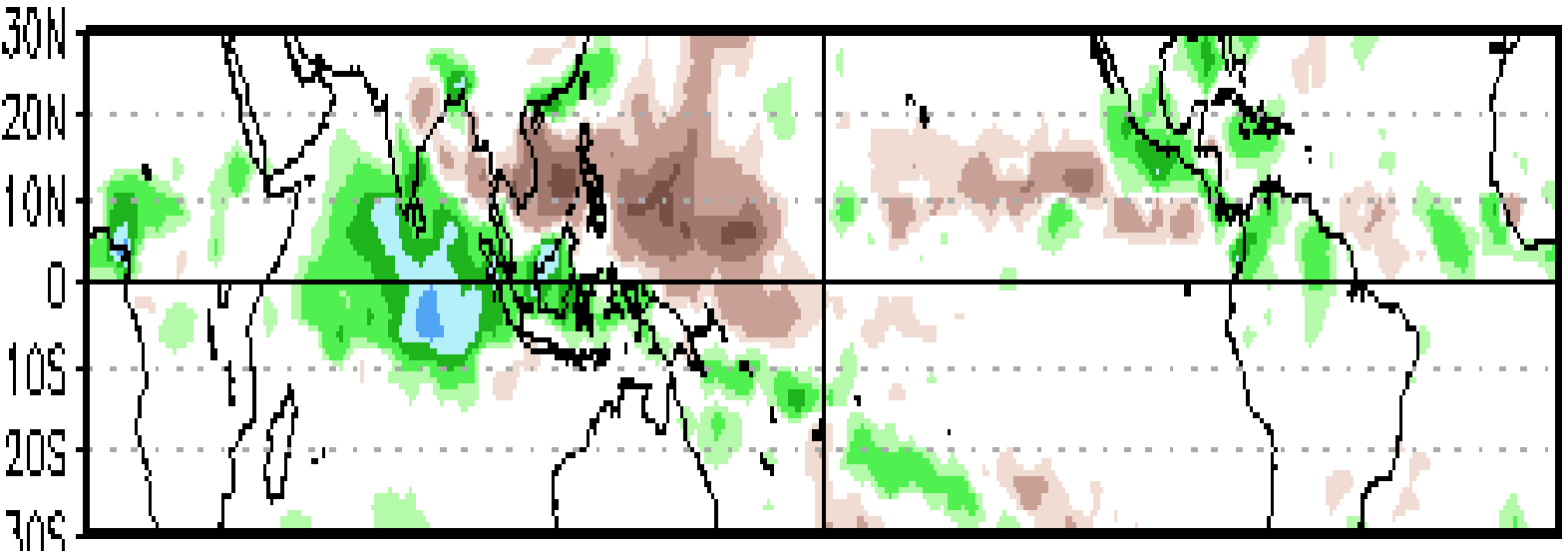

ECMWF




JMA

Models are converging on a common outcome with the amplitude of the MJO increasing during Week-2 with its enhanced phase over the Indian Ocean.

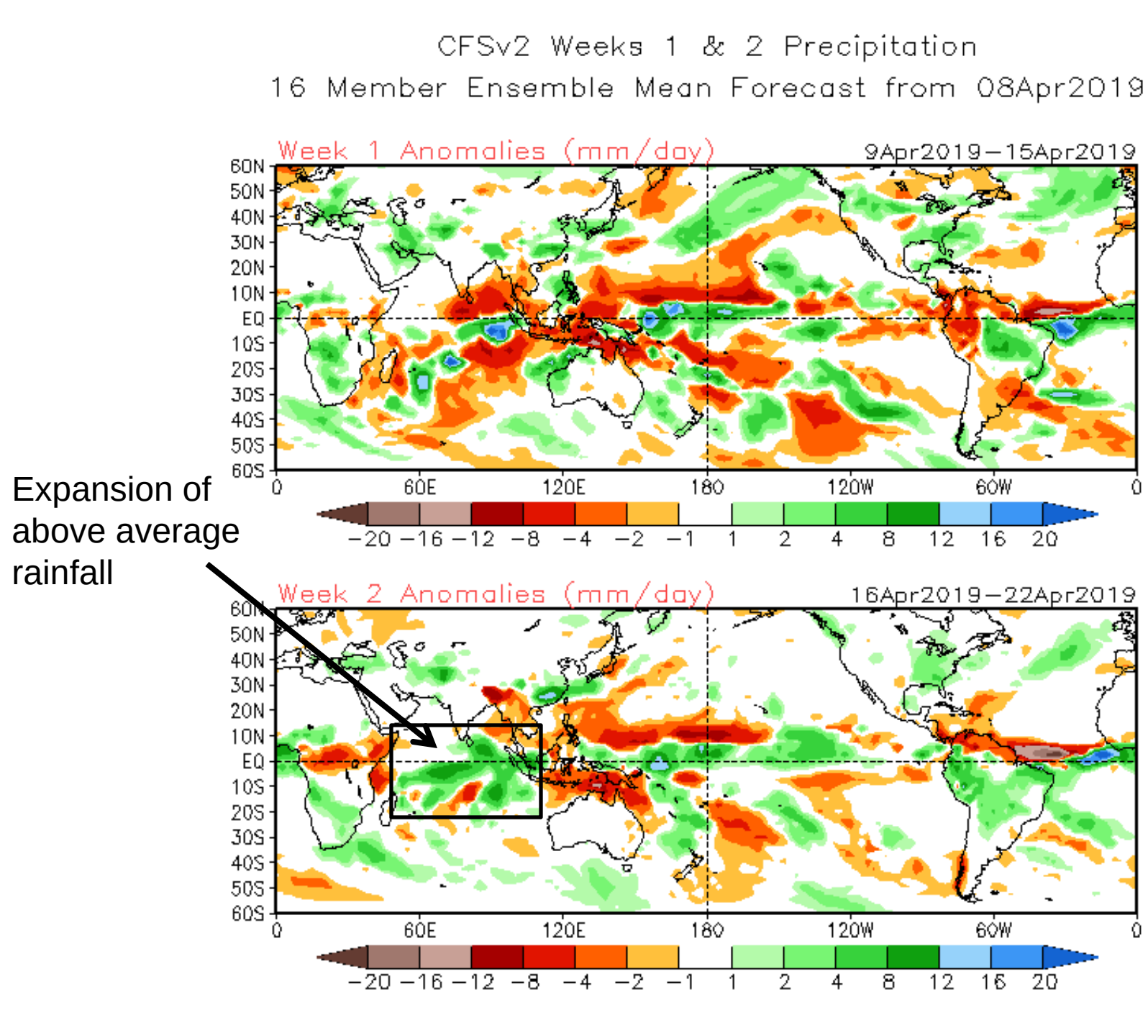
## Average Conditions when the MJO is present



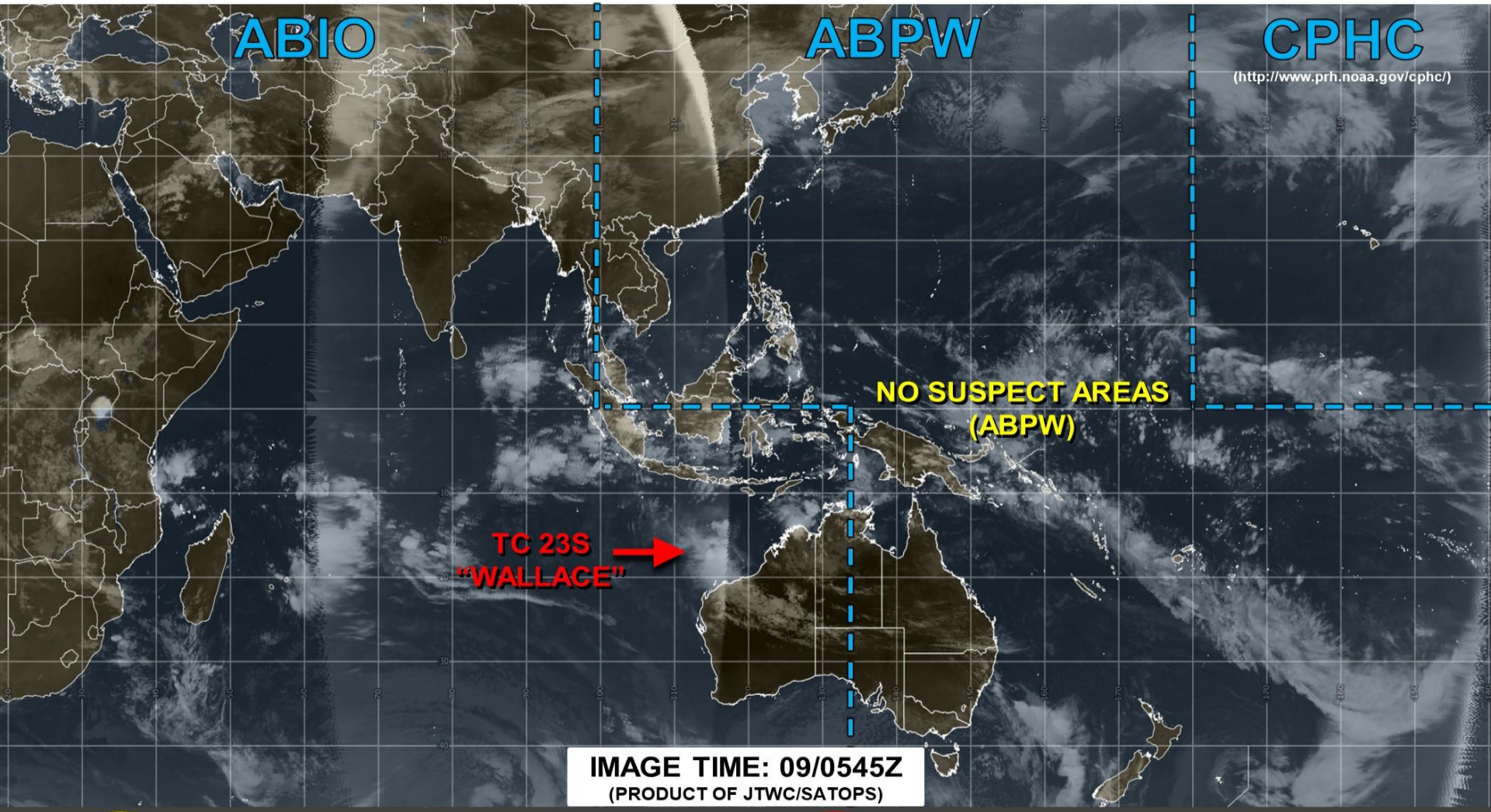

Phase 2

May–Sep Precipitation (mm/day)

CAVEAT: panel is representative of robust MJO events.


CFSv2 Weeks 1 & 2 Precipitation
16 Member Ensemble Mean Forecast from 08Apr2019
Week 1 Anomalies (mm/day)
9Apr2019–15Apr2019
Week 2 Anomalies (mm/day)
16Apr2019–22Apr2019
60N
50N
40N
30N
20N
10N
EQ
10S
20S
30S
40S
50S
60S
0
60E
120E
180
120W
60W
0
−20 −16 −12 −8 −4 −2 −1 1 2 4 8 12 16 20
Expansion of above average rainfall

# JOINT TYPHOON WARNING CENTER

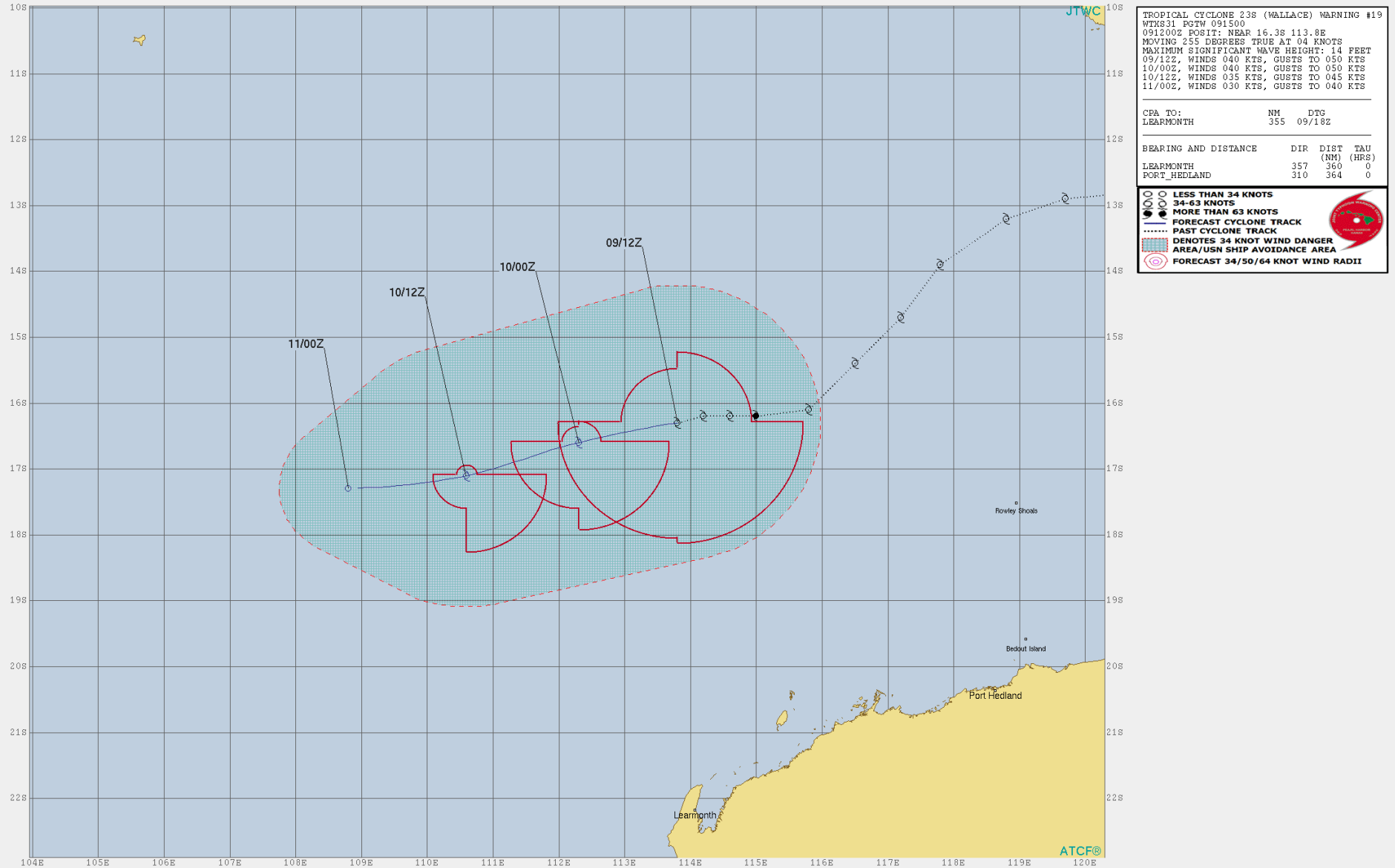



**LOW** TC development unlikely within 24 hours

**MEDIUM** TC development likely, but expected to occur beyond 24 hours

**HIGH** TC development likely within 24 hours (Reference TCFA)

Tropical Cyclone (Reference Warning)

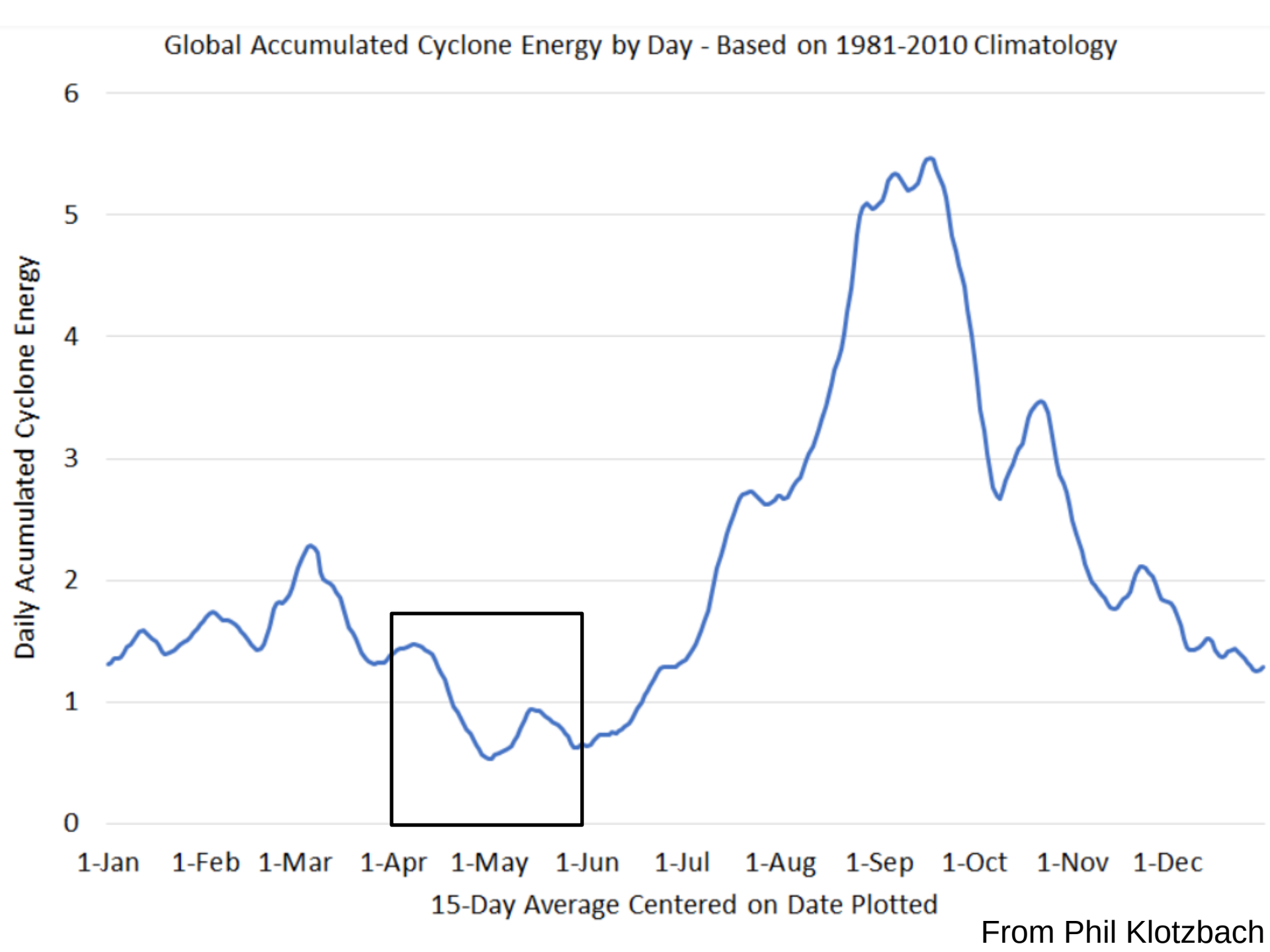



TROPICAL CYCLONE 23S (WALLACE) WARNING #19
WTXS31 PGTW 091500
091200Z POSIT: NEAR 16.3S 113.8E
MOVING 255 DEGREES TRUE AT 04 KNOTS
MAXIMUM SIGNIFICANT WAVE HEIGHT: 14 FEET
09/12Z, WINDS 040 KTS, GUSTS TO 050 KTS
10/00Z, WINDS 040 KTS, GUSTS TO 050 KTS
10/12Z, WINDS 035 KTS, GUSTS TO 045 KTS
11/00Z, WINDS 030 KTS, GUSTS TO 040 KTS

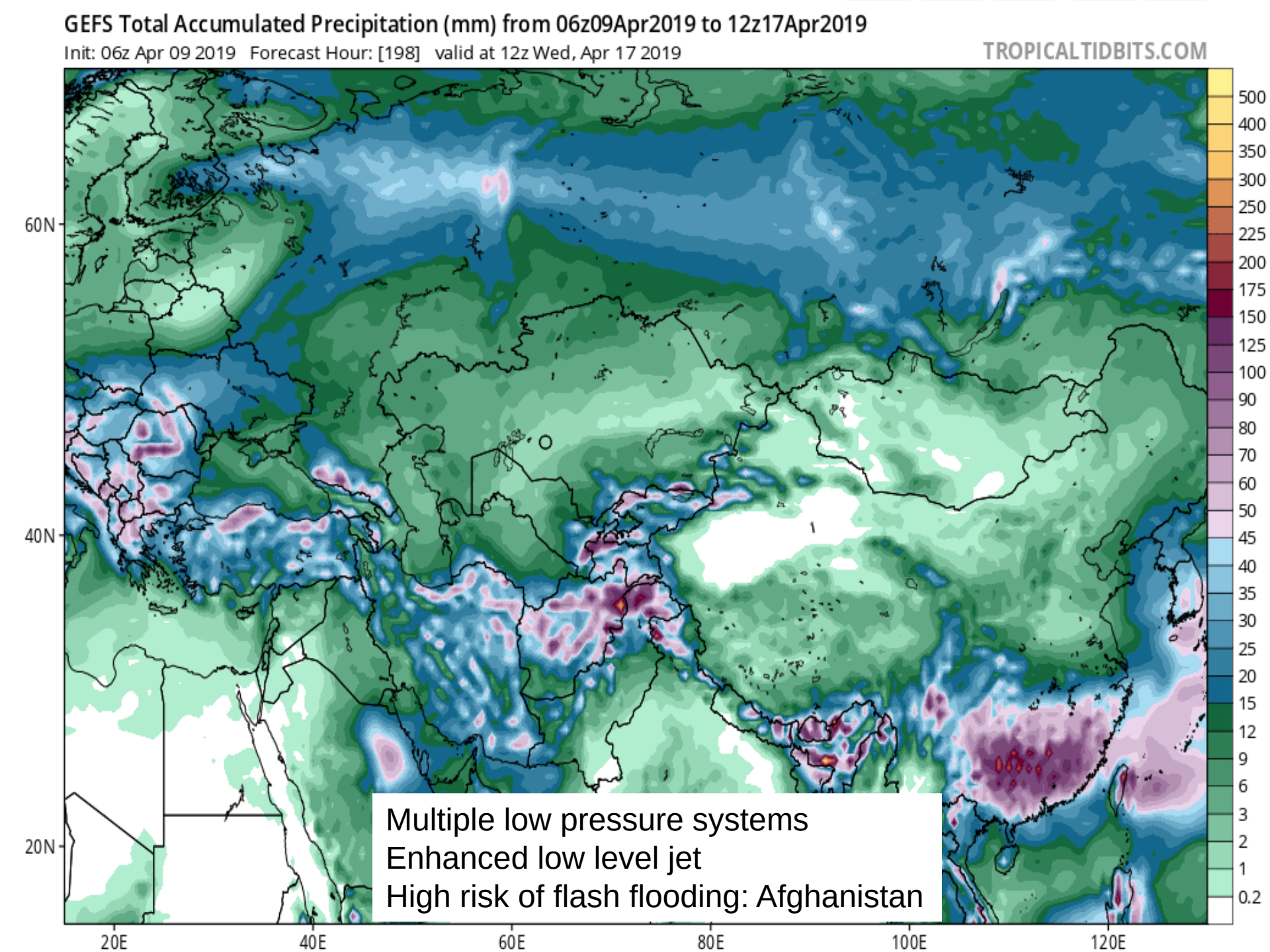
| CPA TO: | NM | DTG |
|---|---|---|
| LEARMONTH | 355 | 09/18Z |

| BEARING AND DISTANCE | DIR | DIST (NM) | TAU (HRS) |
|---|---|---|---|
| LEARMONTH | 357 | 360 | 0 |
| PORT_HEDLAND | 310 | 364 | 0 |

LESS THAN 34 KNOTS
34-63 KNOTS
MORE THAN 63 KNOTS
FORECAST CYCLONE TRACK
PAST CYCLONE TRACK
DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
FORECAST 34/50/64 KNOT WIND RADII

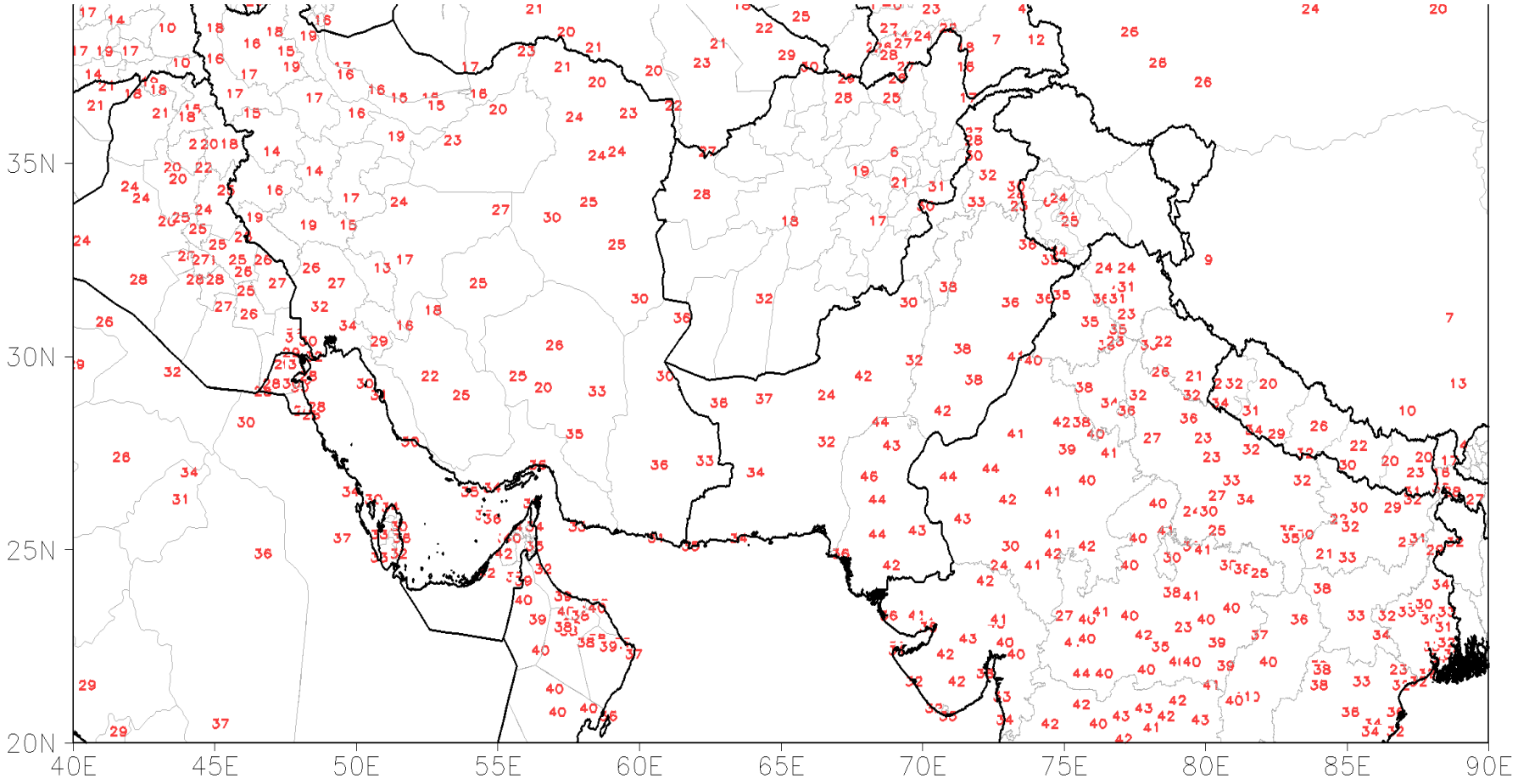



From Phil Klotzbach


GEFS Total Accumulated Precipitation (mm) from 06z09Apr2019 to 12z17Apr2019
Init: 06z Apr 09 2019 Forecast Hour: [198] valid at 12z Wed, Apr 17 2019
TROPICALTIDBITS.COM
60N
40N
20N
20E
40E
60E
80E
100E
120E
500
400
350
300
250
225
200
175
150
125
100
90
80
70
60
50
45
40
35
30
25
20
15
12
9
6
3
2
1
0.2
Multiple low pressure systems
Enhanced low level jet
High risk of flash flooding: Afghanistan

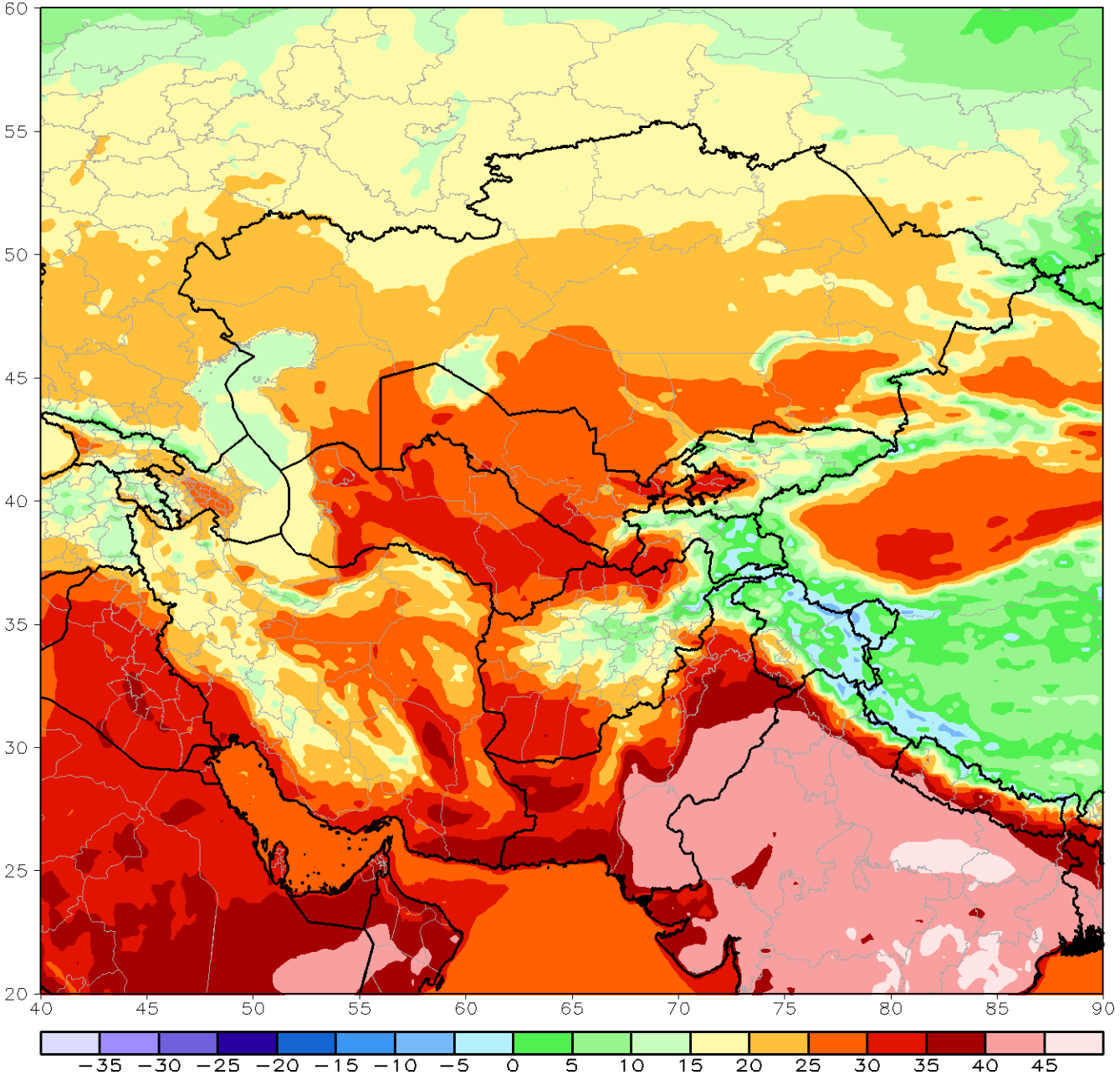
# GTS Station 24-hr Maximum Temperature (C)

Period: 07Apr2019

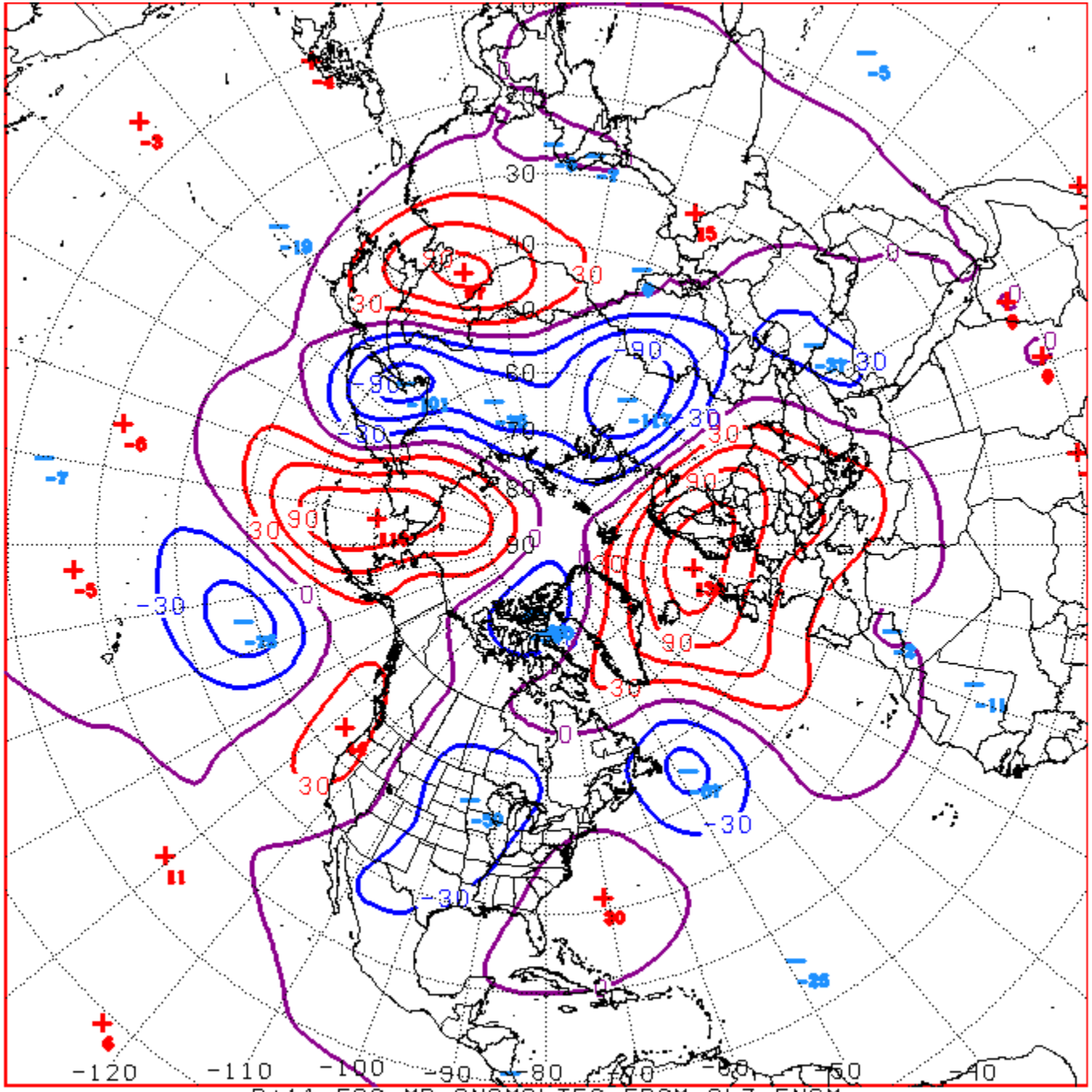


GFS week1 Temperature Max (C)

Ending: 06z16Apr2019



# Connections to U.S. Impacts




D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE APR 09 2019 1329 UTC CNTD APR 20 2019

# Yesterday's Week 2 – Temperature and Precipitation