An Investigation into the squal line affecting Oman on 14th of April, 2003

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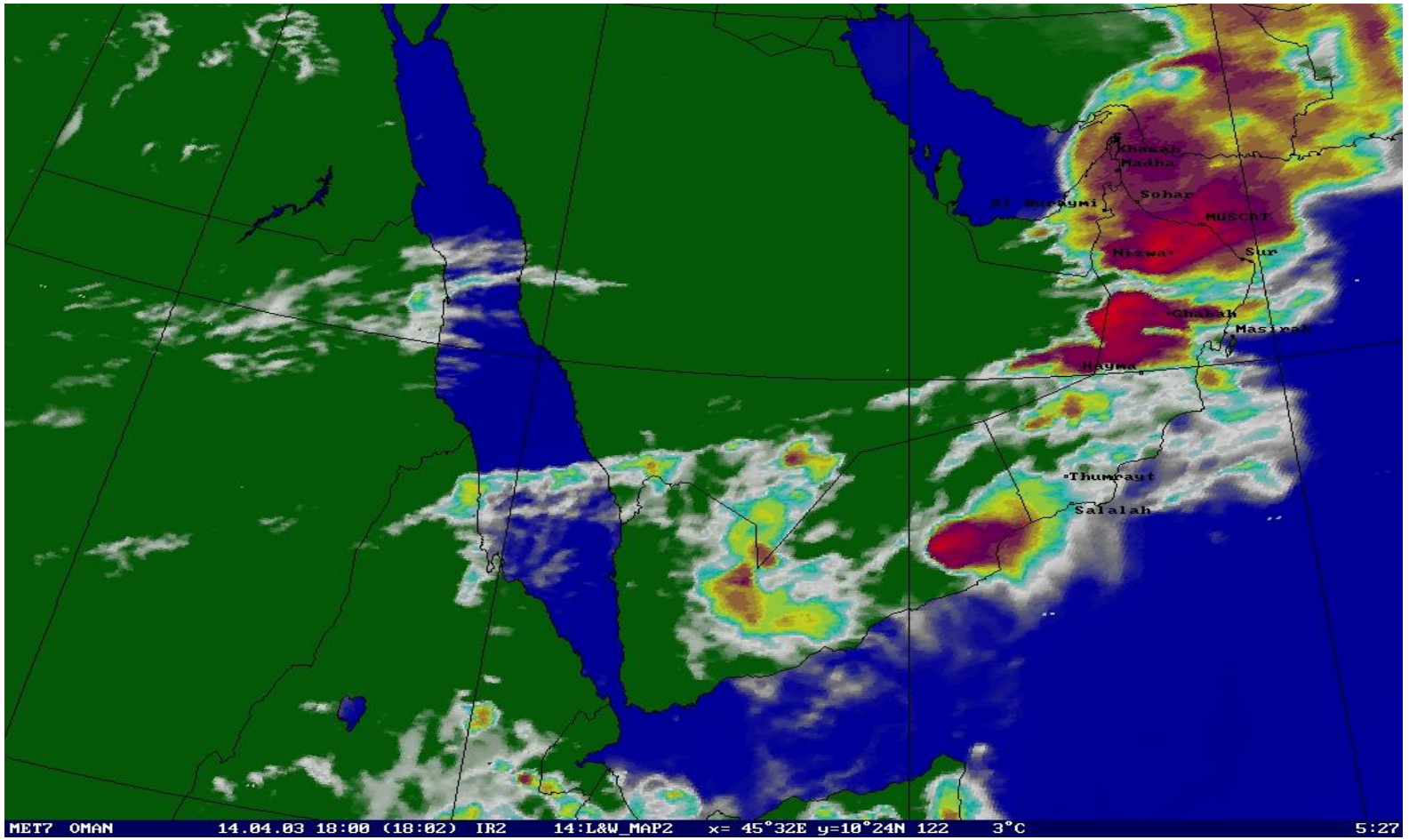
- The month of April is considered to be the transition period between the winter season and the summer season in Oman.
- Rain events during this month, if they occur, tend to be intensive and widespread.

A satellite image taken at 18 UTC on Monday, April 14th, 2003



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Rain Intensity

- anotable rainfall amount of 82 mm was recorded in Bahla within less than 12 hours from 21:30 LST on the 14th to 07:10 LST on the 15th.
- According to climate records, this rainfall rate is highest ever recorded in northern Oman for the month of April in the last two decades.
- During the same time interval there were other noticeable rainfall rates in Al-Dakhlyah region: 50 mm of rain were recorded in Izki, 42 mm in Bidbid, 44 mm in Samil, 65 mm in Nizwa, and 42 mm in Birkat Almouz.

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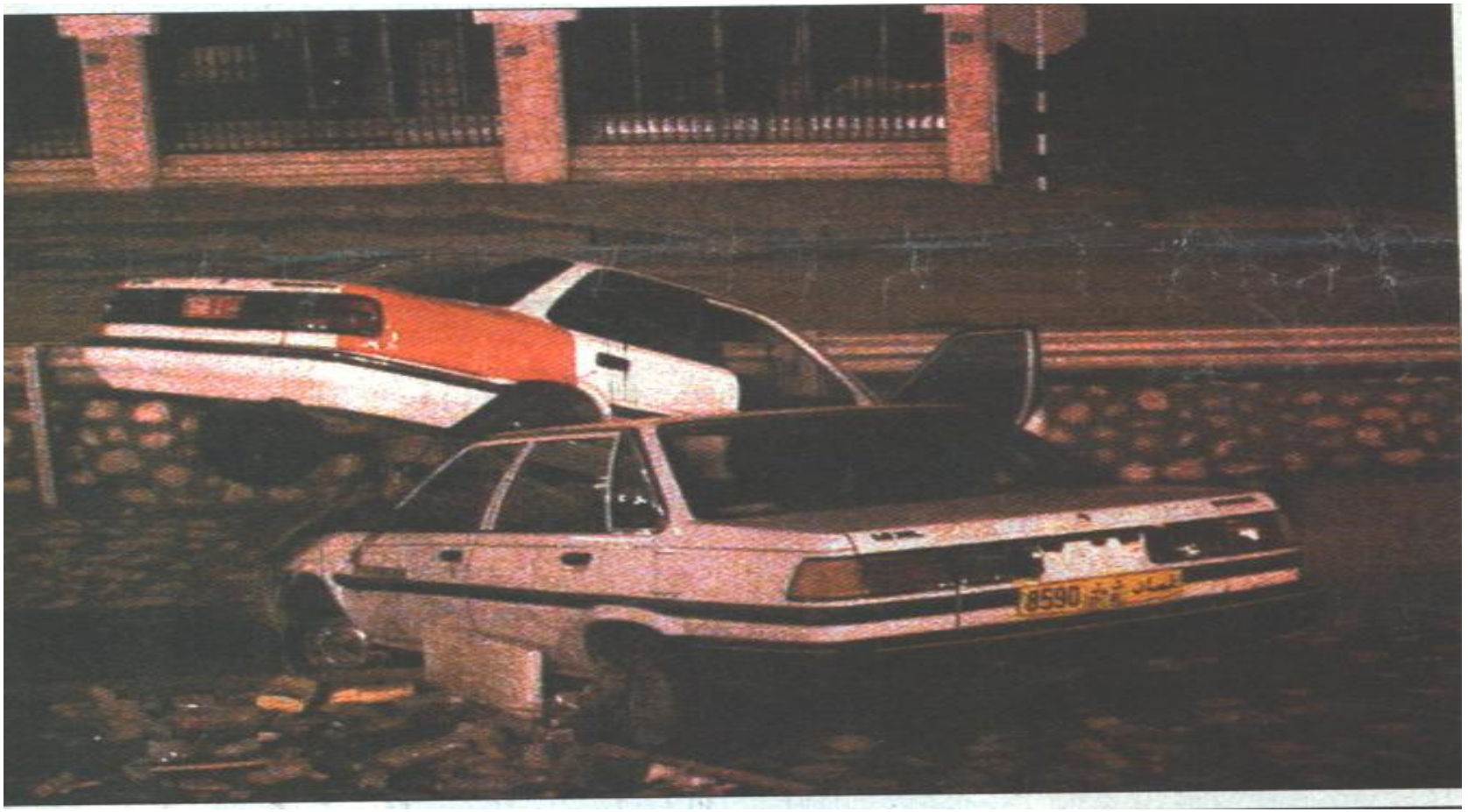
Causalities and Property Damage

- 20 deaths and a lot of property damage

Causalities and Property Damage



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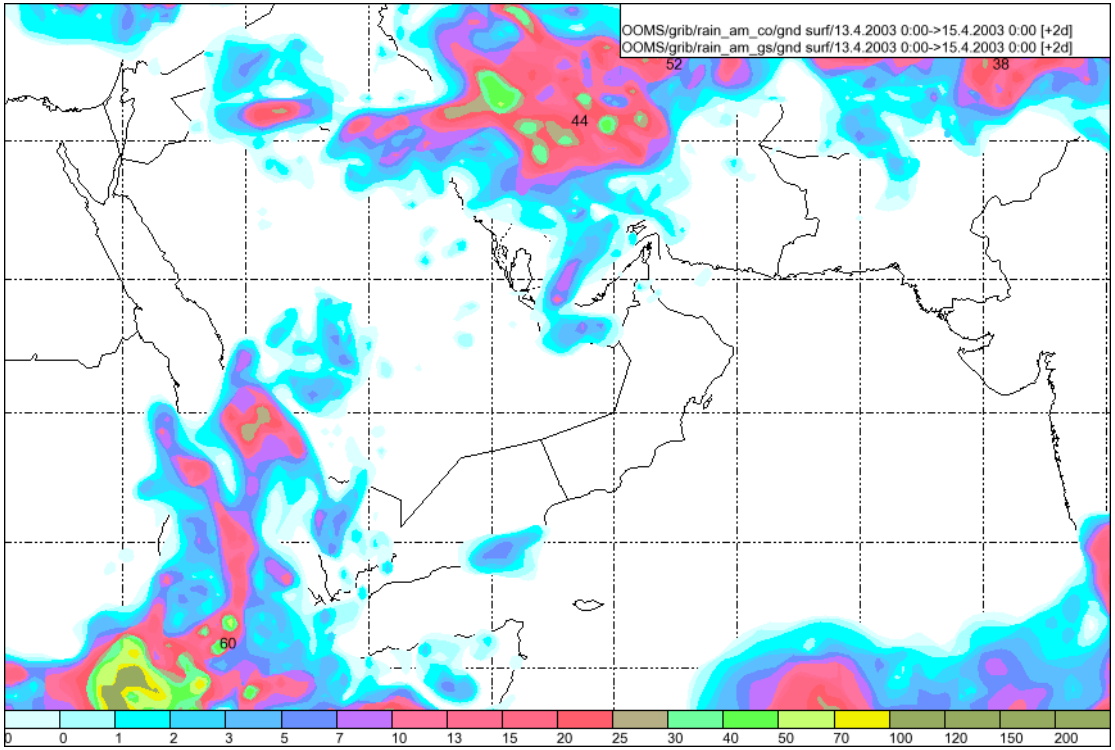
Model Guidance: ORM's 48 hour forecast of total 48 hour rainfall valid at Tuesday 00 UTC.



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Model Guidance:Bracknell's 48 hour forecast of total 24 hour rainfall valid at Tuesday 00 UTC.

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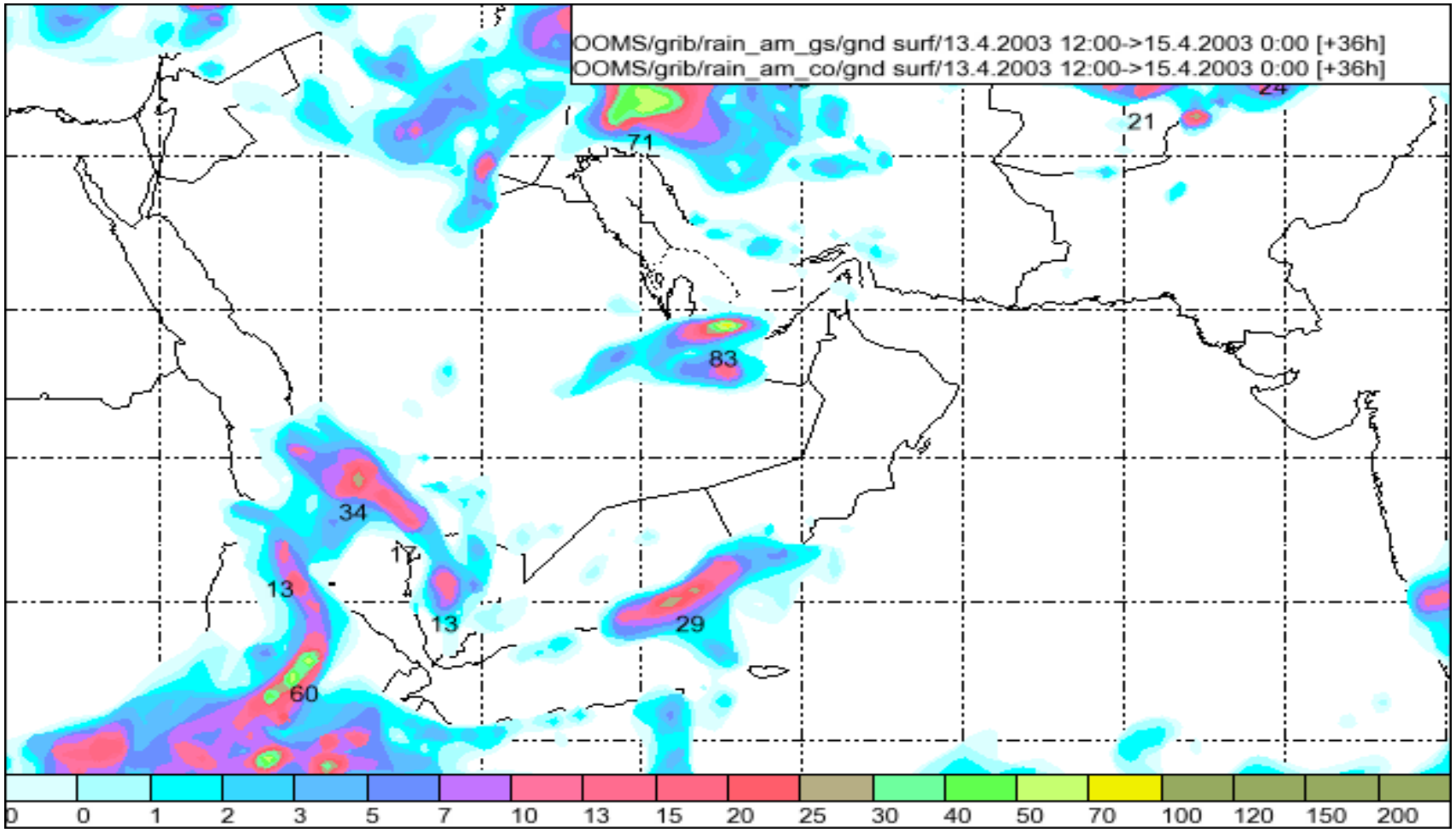
Forecast based on Sunday's ORM 12 UTC run.



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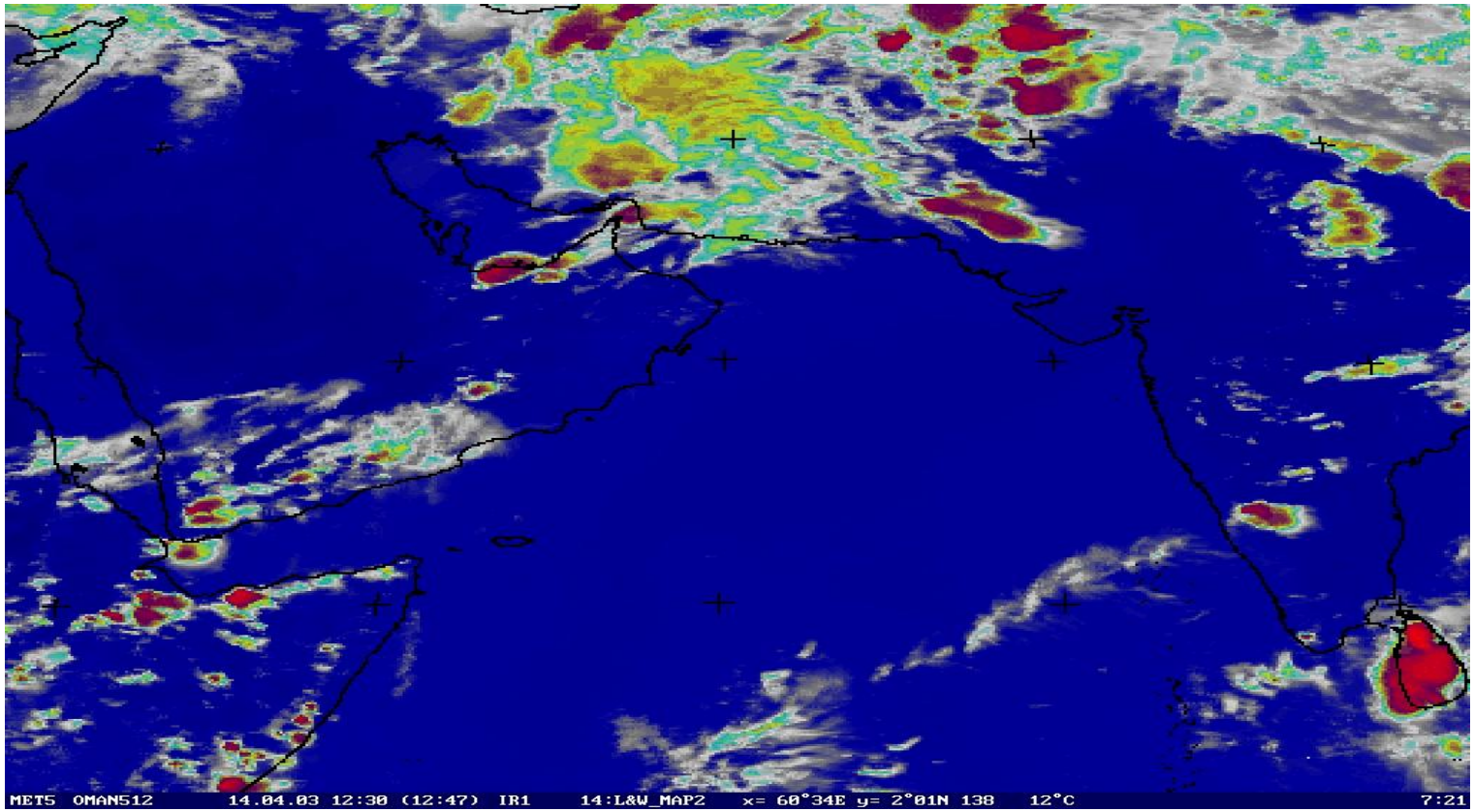
A satellite image taken at 12:30 UTC on Monday, April 14th, 2003.



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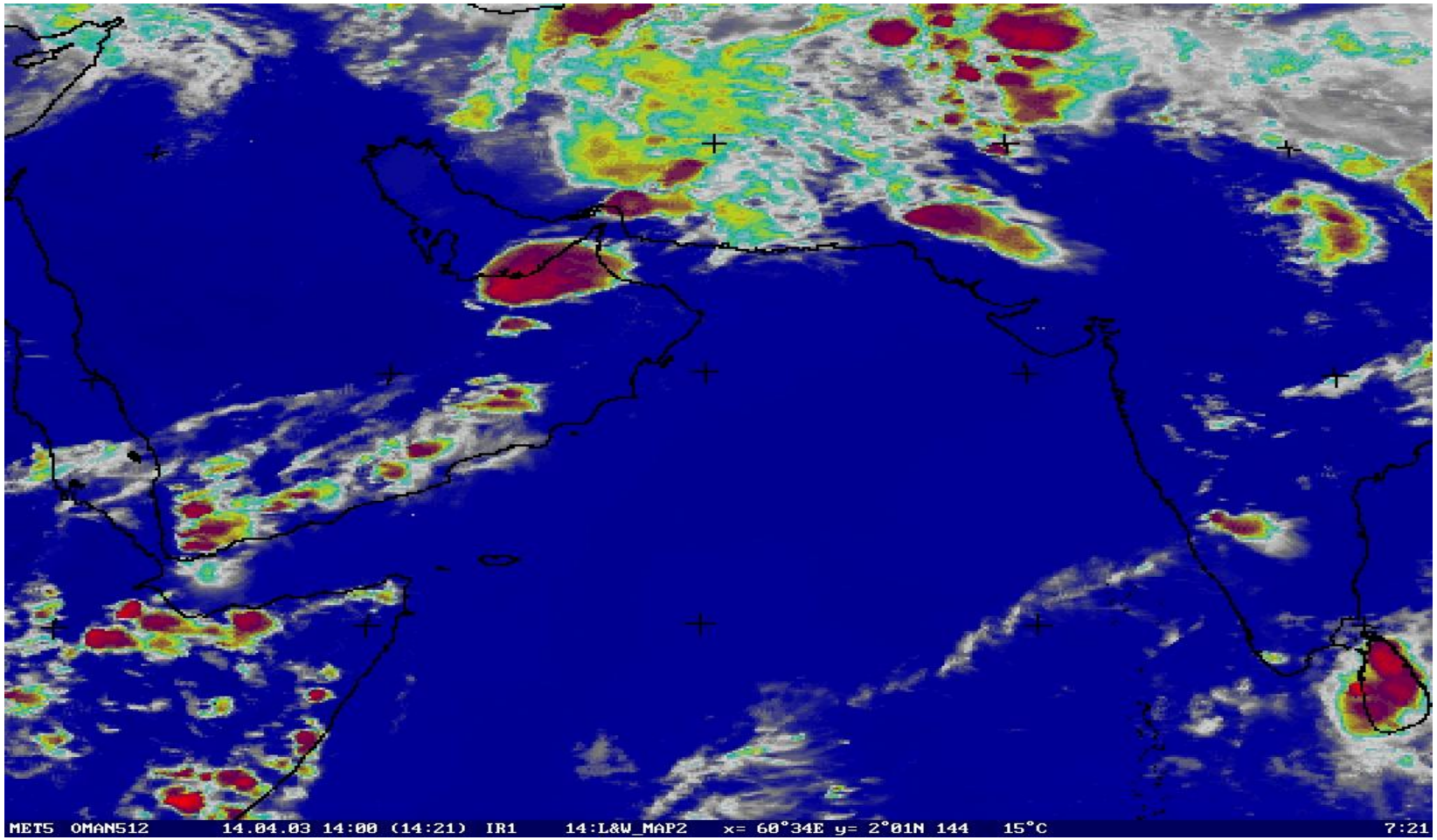

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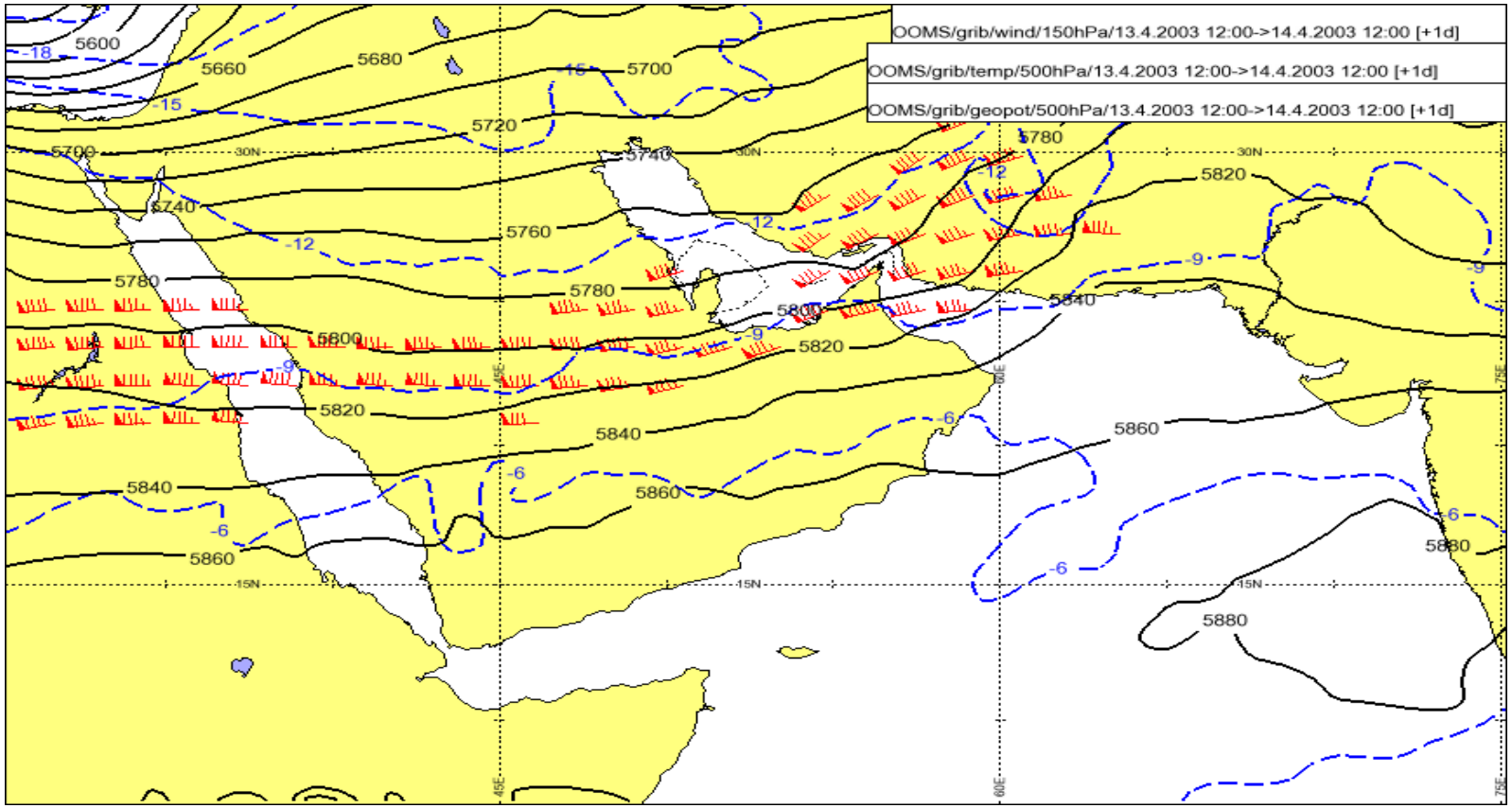
ORM's 24 hour forecast of 500 hpa geopotential heights / temperature and 150 hpa winds greater than 85 kt valid at Monday 12 UTC



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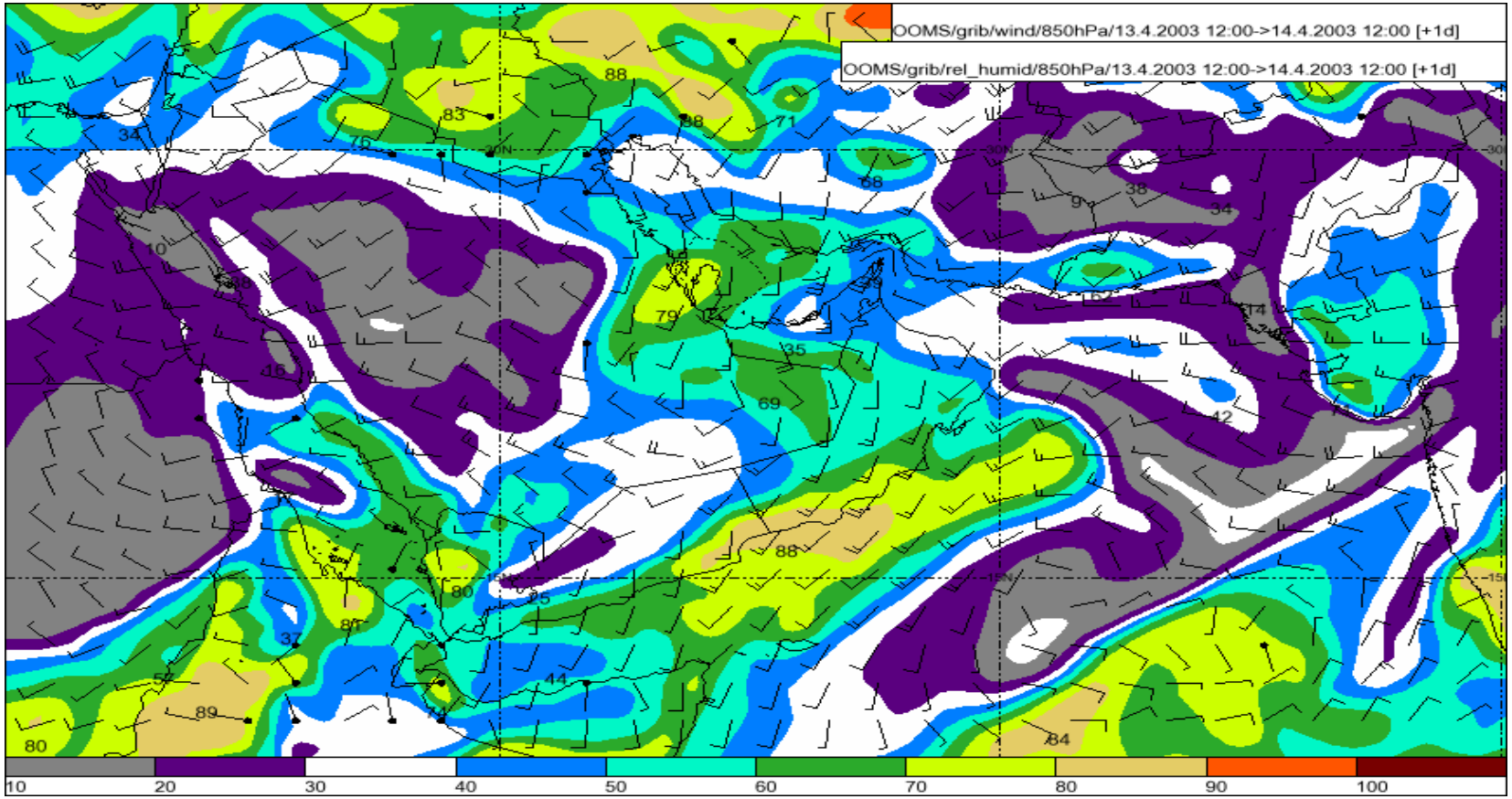
ORM's 24 hour forecast of 850 hpa winds / Relative Humidity valid at Monday 12 UTC.



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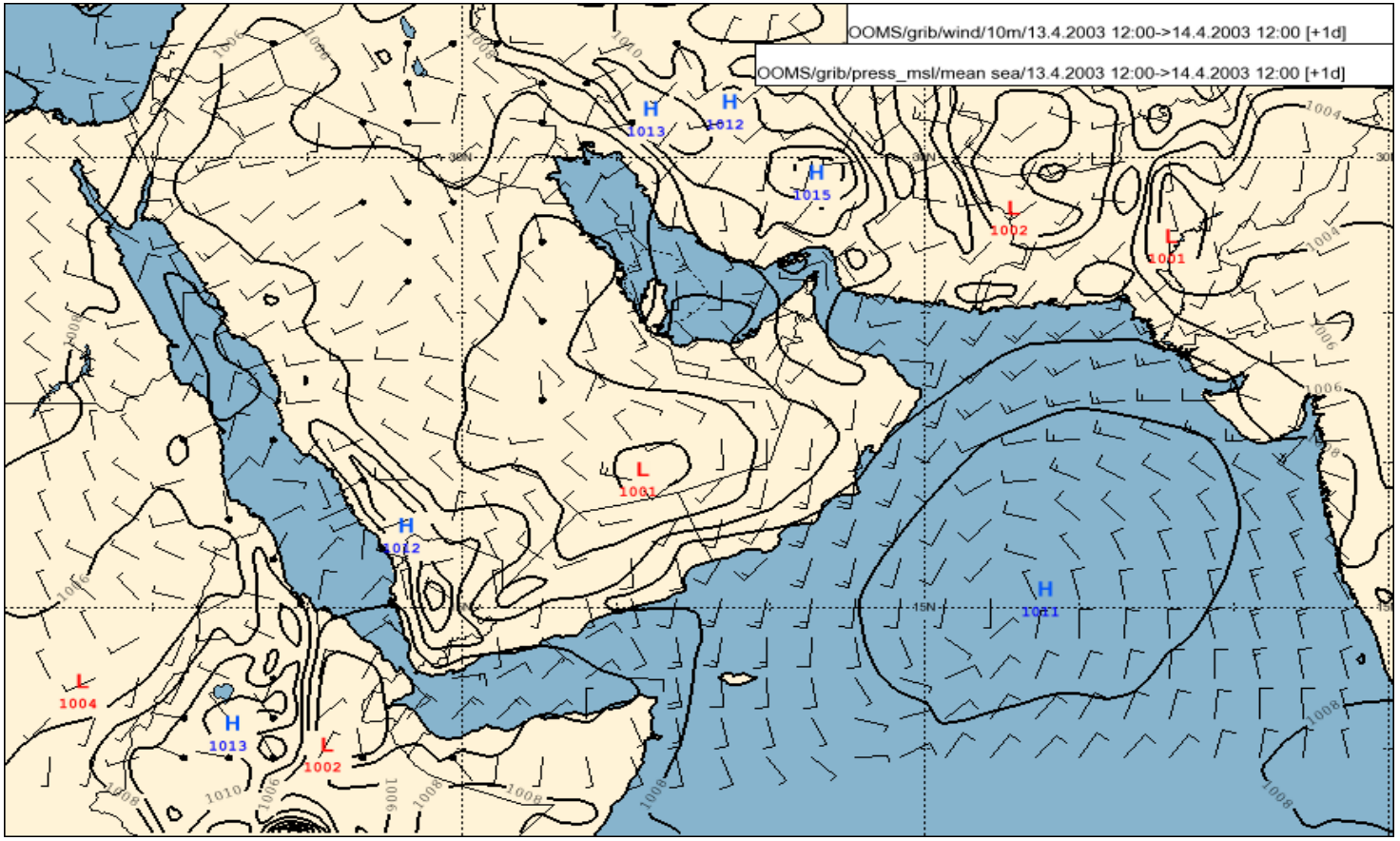
ORM's 24 hour forecast of 10 m winds and mean sea level pressure valid at Monday 12 UTC.



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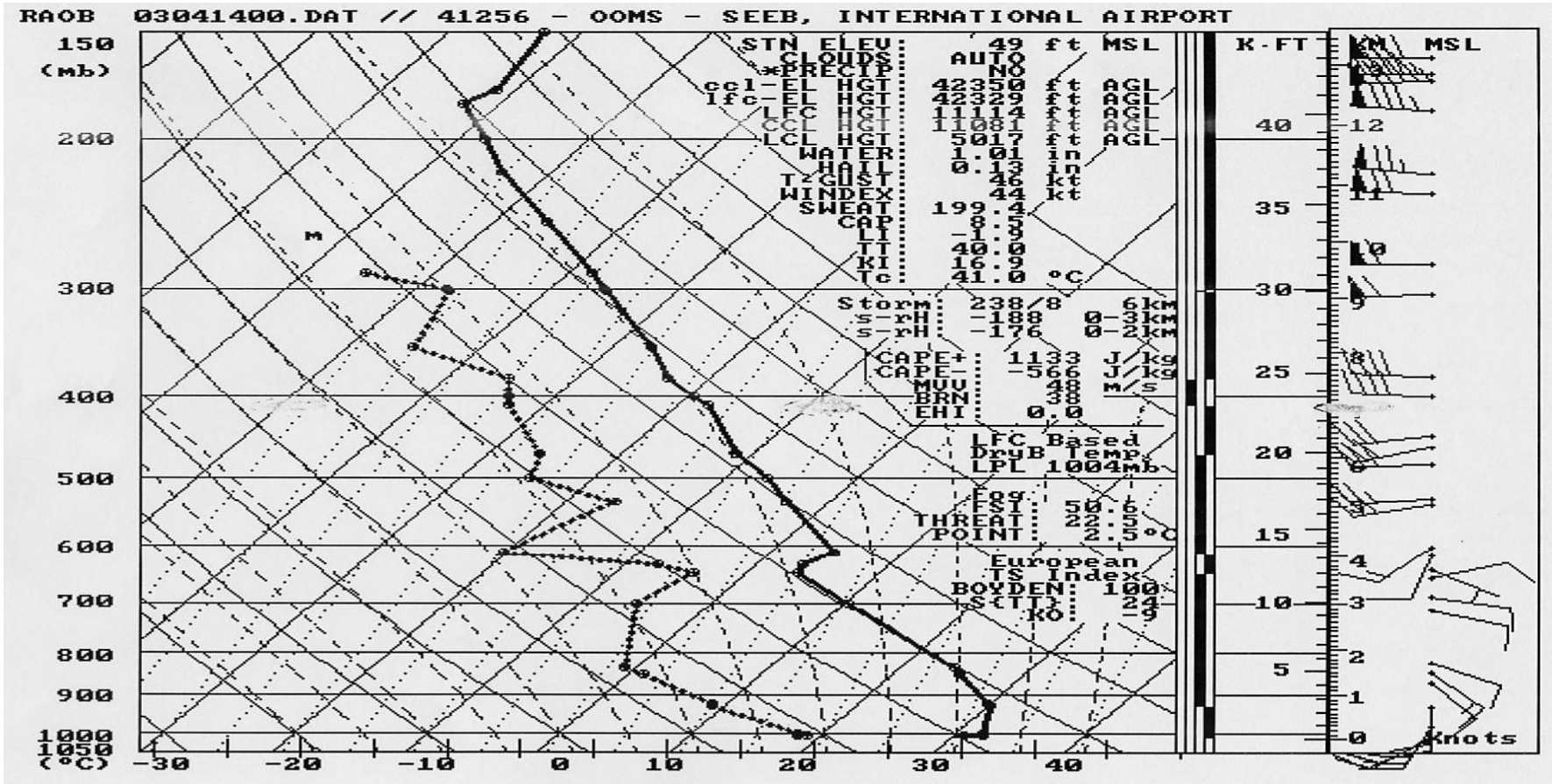
Muscat's Skew-T diagram on Monday 00 UTC



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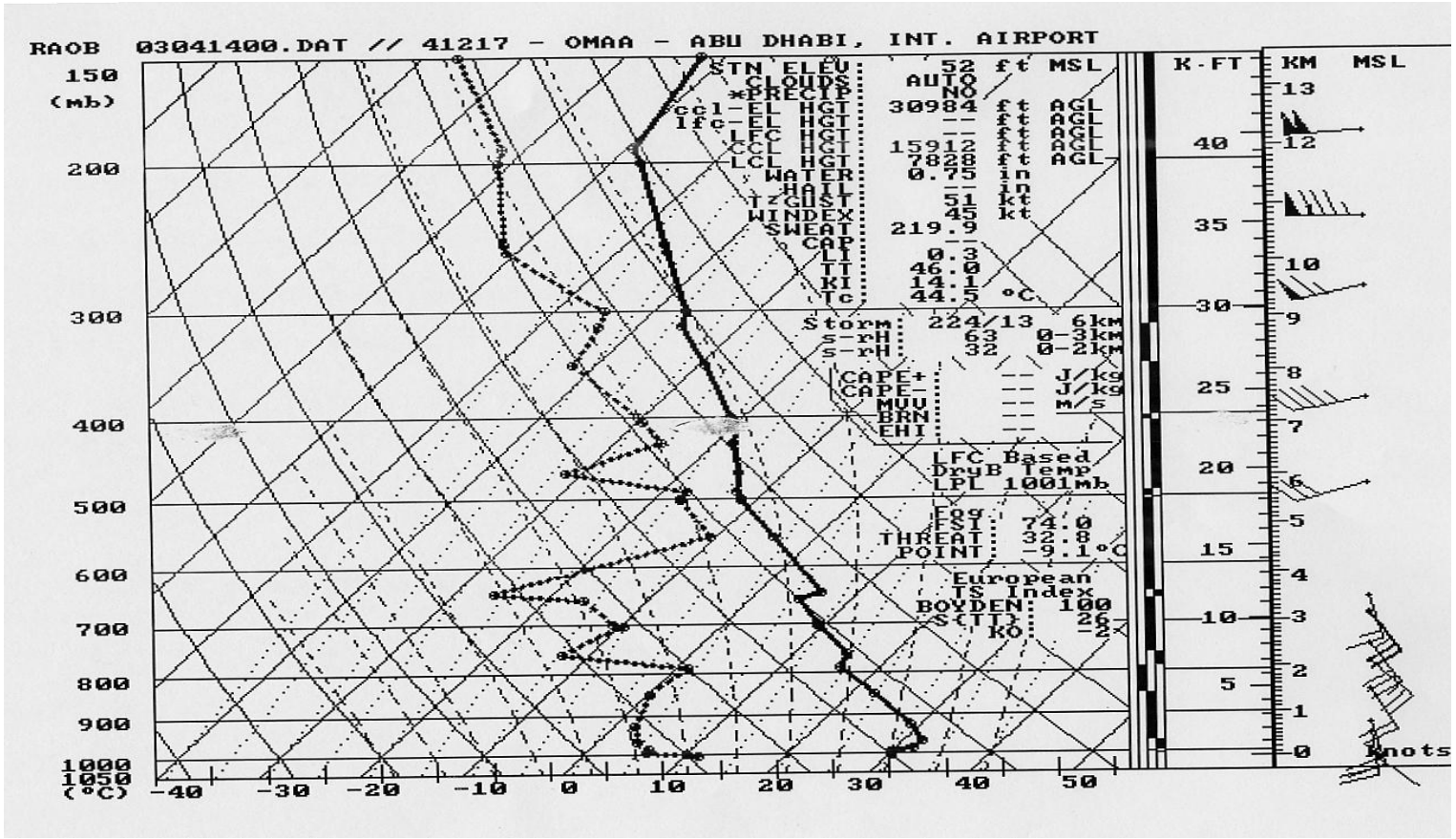
Abudhabi's Skew-T diagram on Monday 00 UTC.



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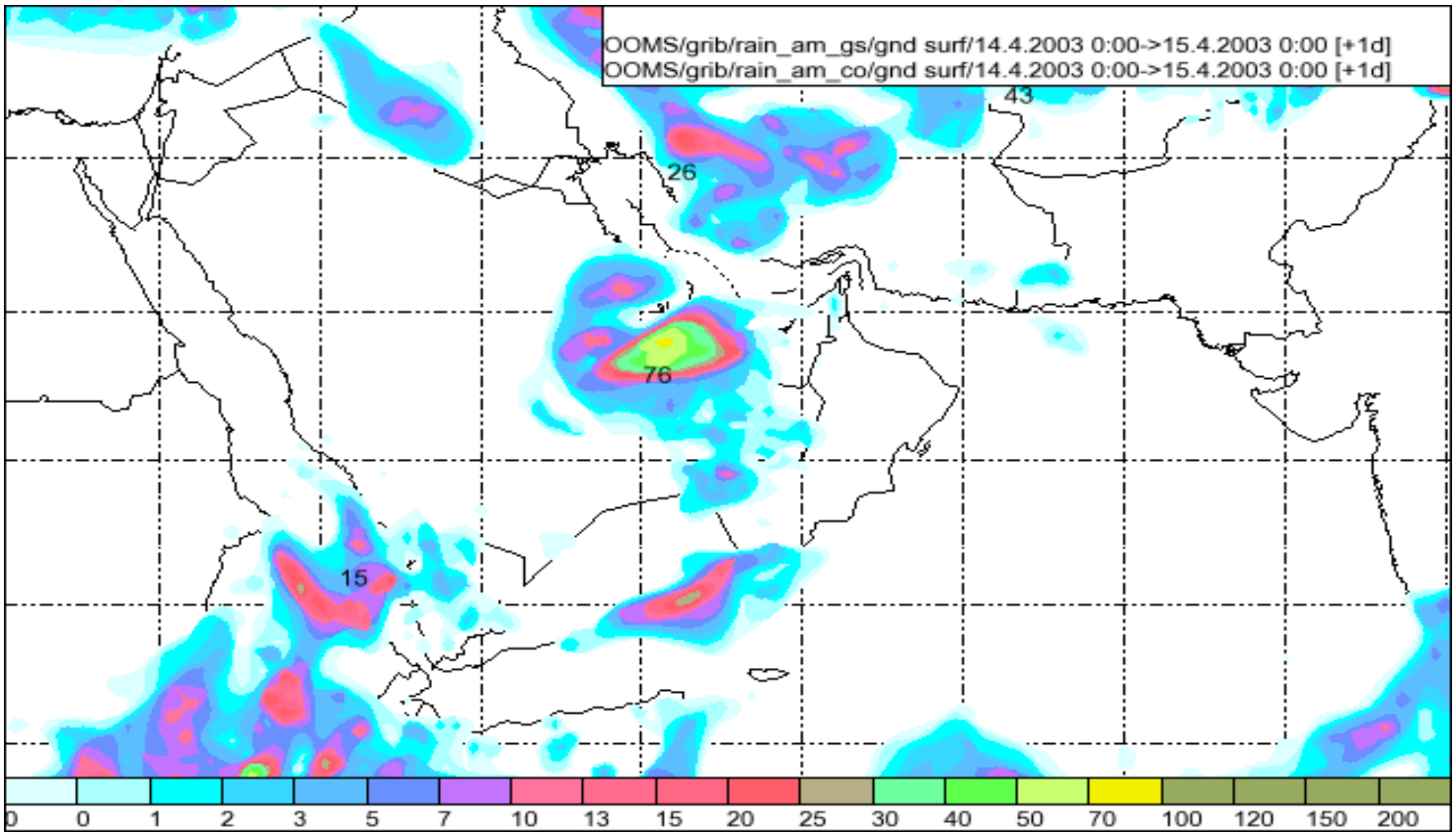
24 hour forecast of total rainfall ending at Tuesday 00 UTC



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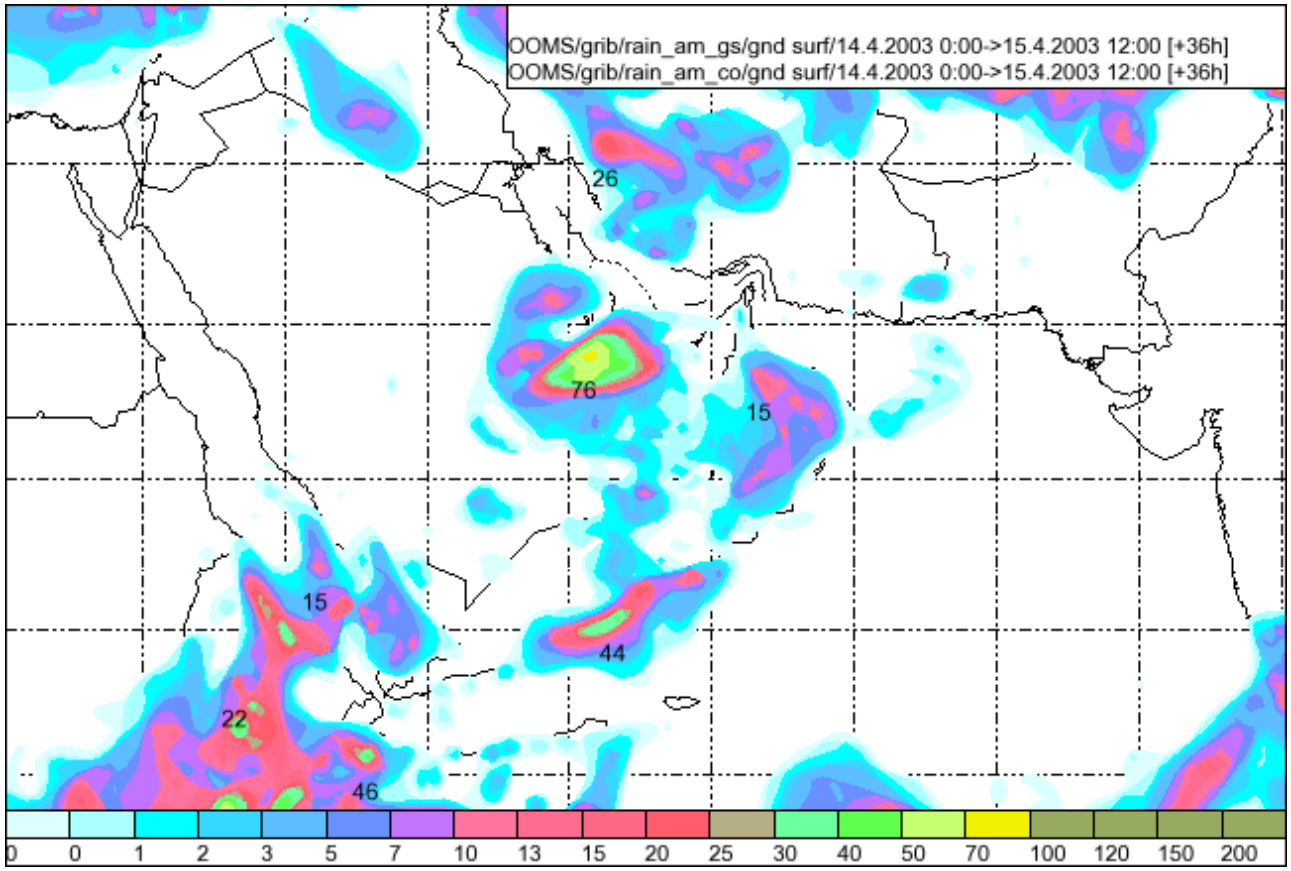
ORM 36 hour forecast of total rainfall ending at Tuesday 12 UTC.



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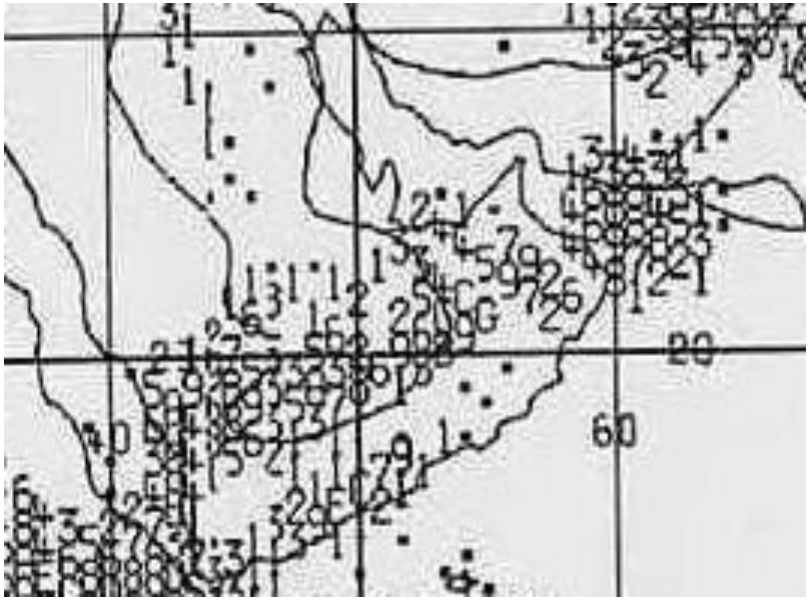
24 /48 hour total rain forecast valid at Tuesday 00 UTC /wed 00 UTC from Bracknell model



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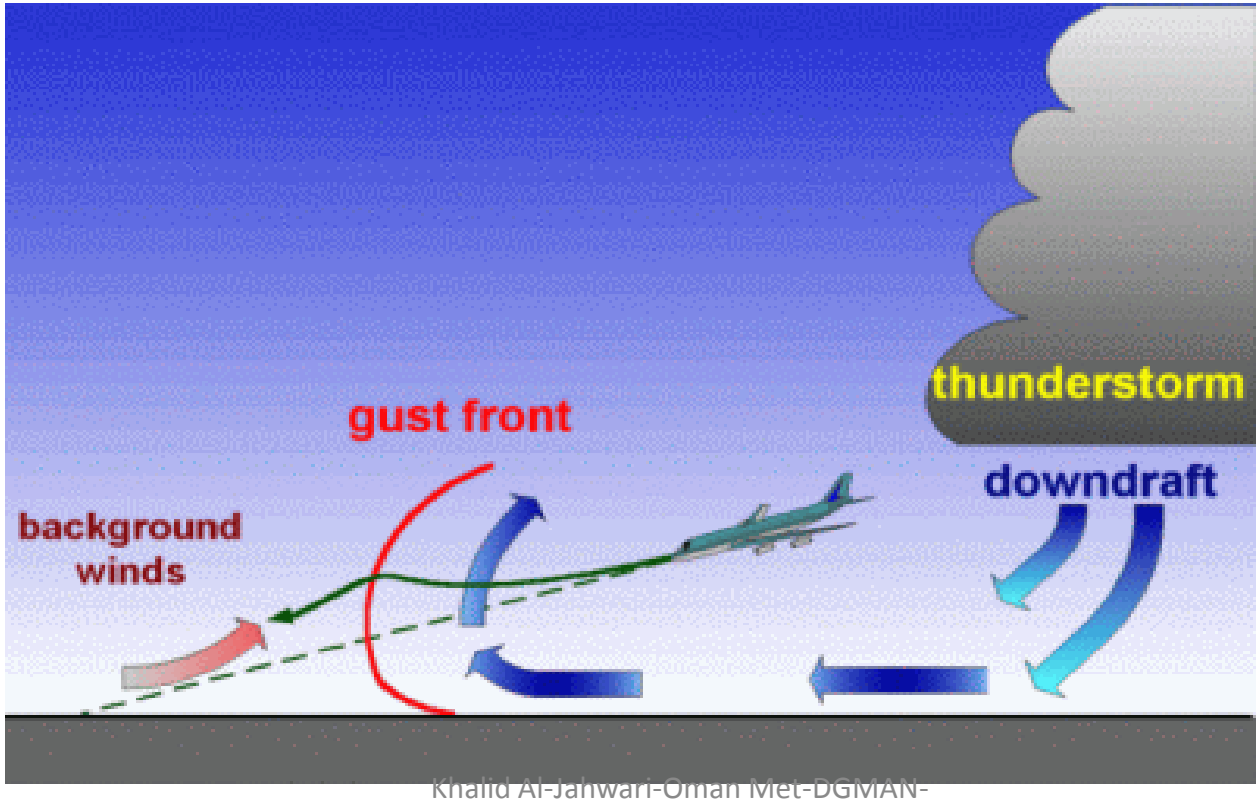
Factors Leading to the Severe Weather Encountered.

- Wind Shear and New Cell Formation along the Gust Front.



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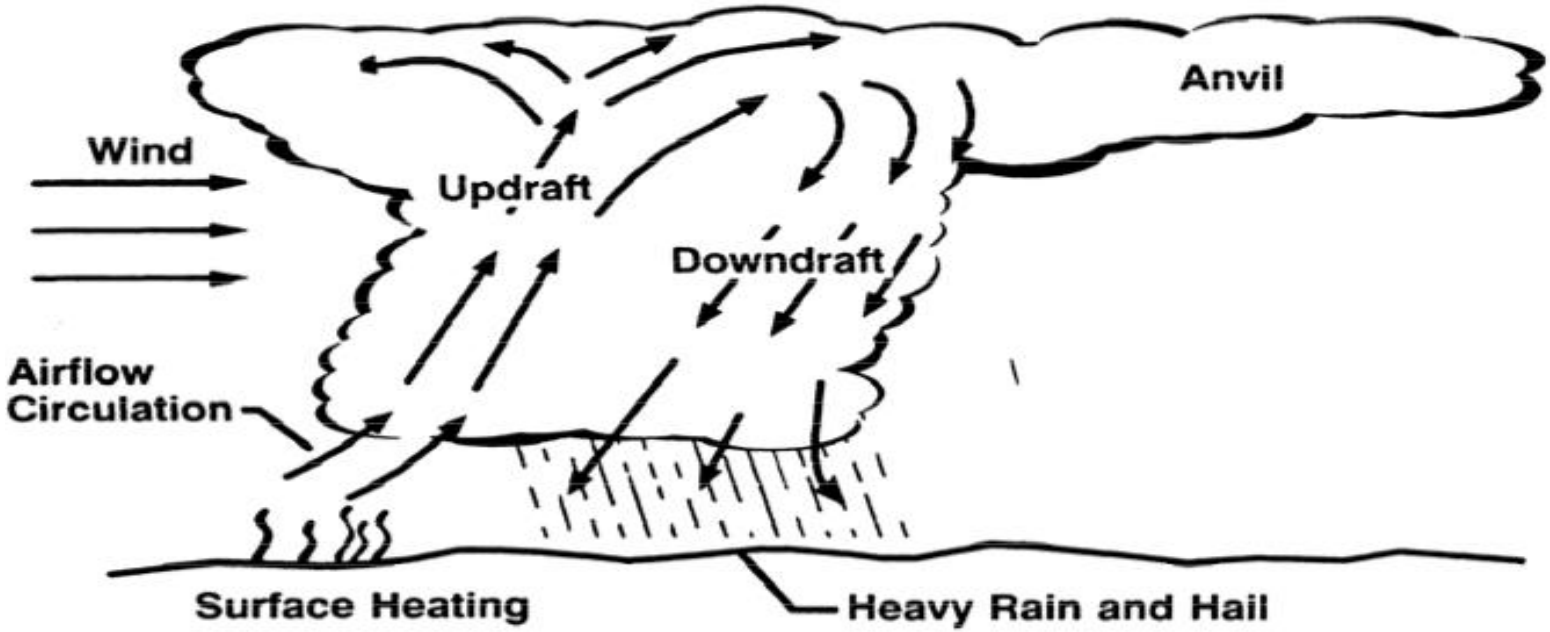
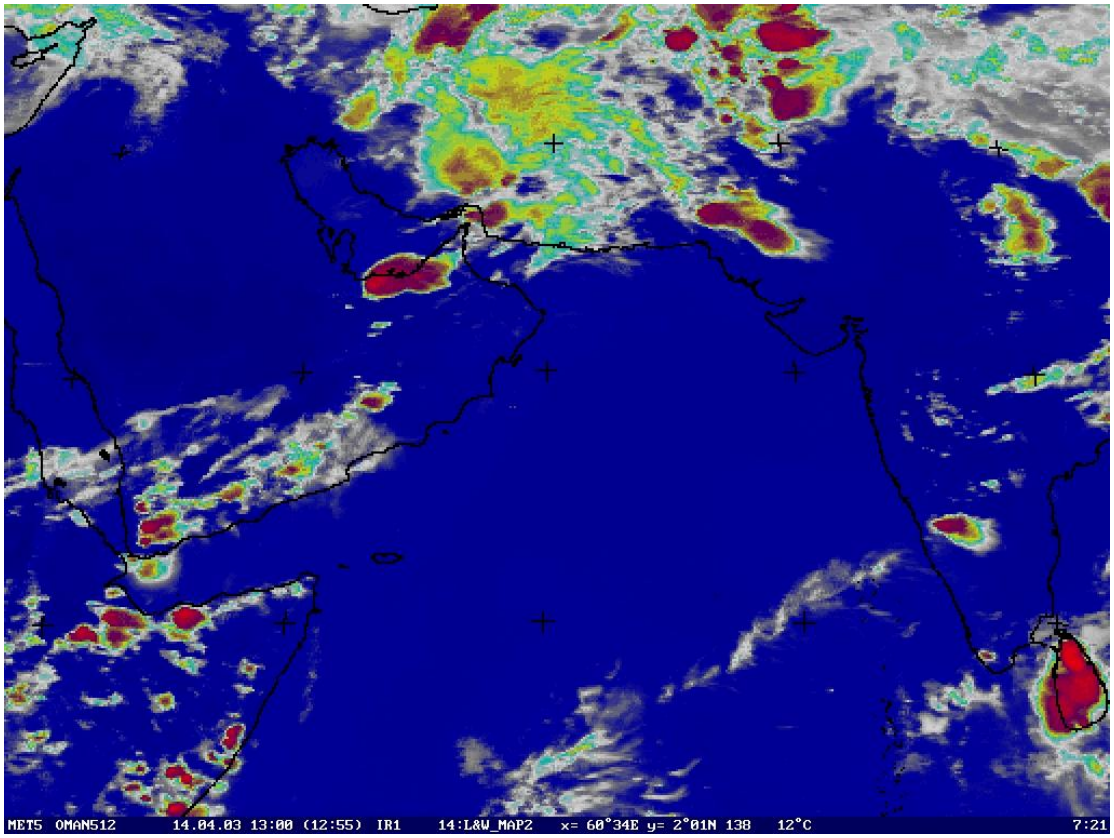


Figure 3. Severe frontal thunderstorm anatomy.

Factors Leading to the Severe Weather Encountered.



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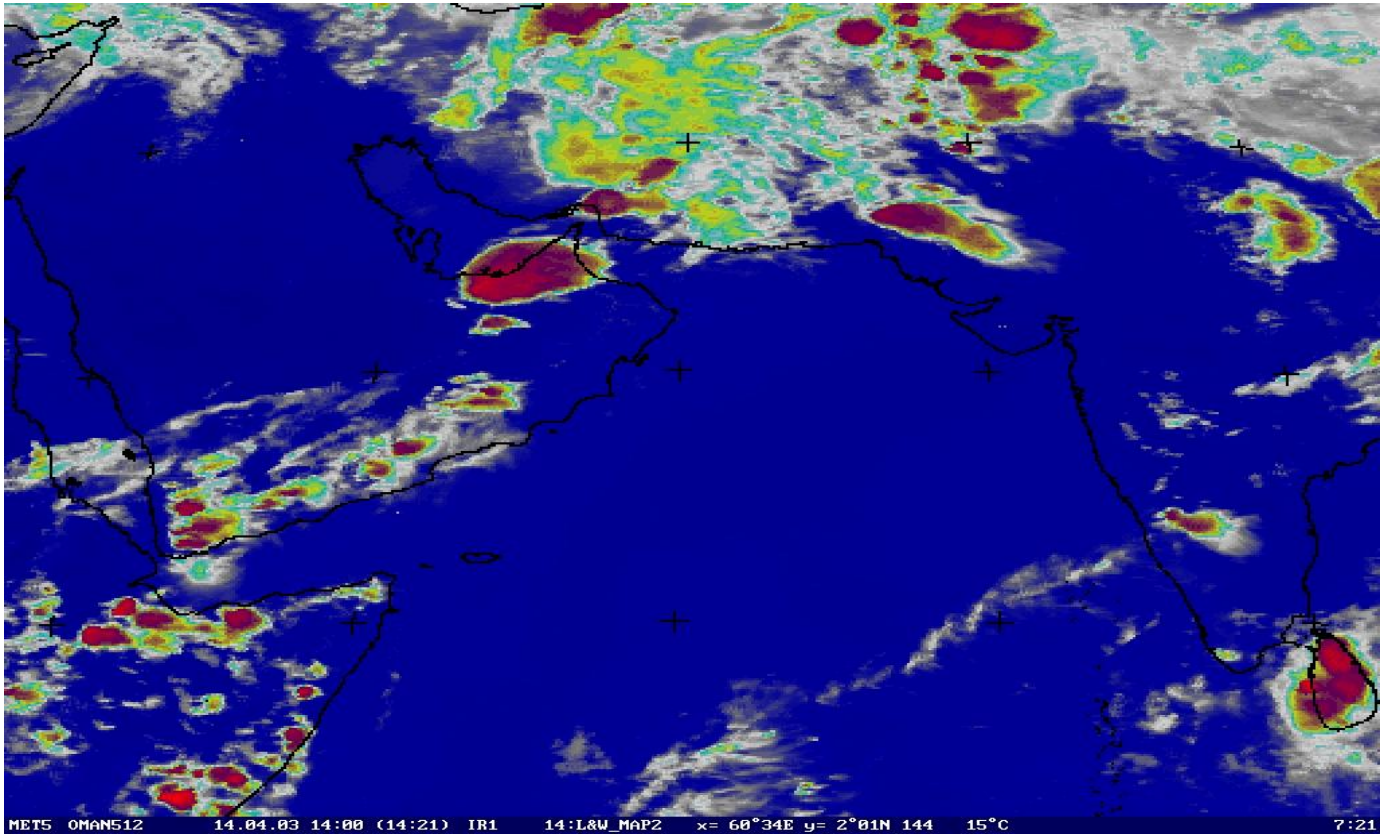
A satellite image taken at 14:00 UTC on Monday, April 14th, 2003.



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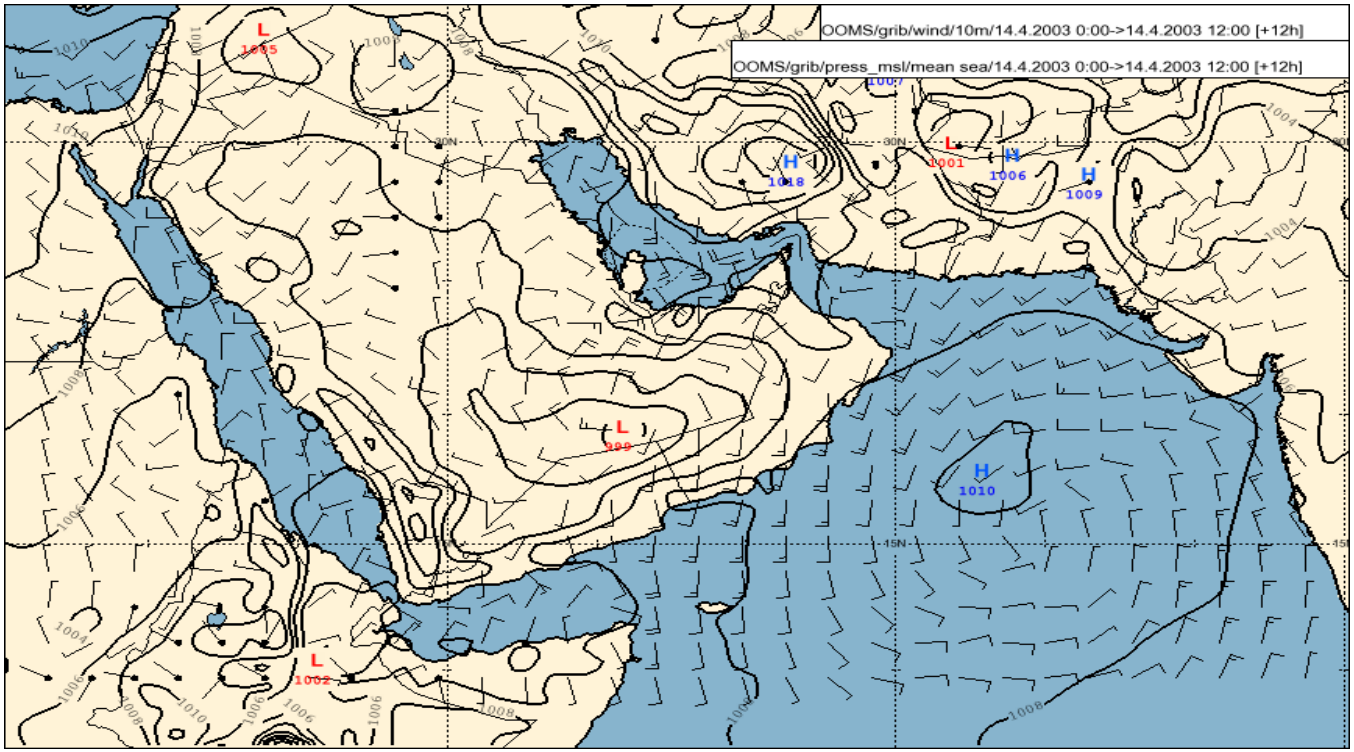
Factors Leading to the Severe Weather Encountered.

2. Moisture Feeding: Low Level Jet at 850 hpa.



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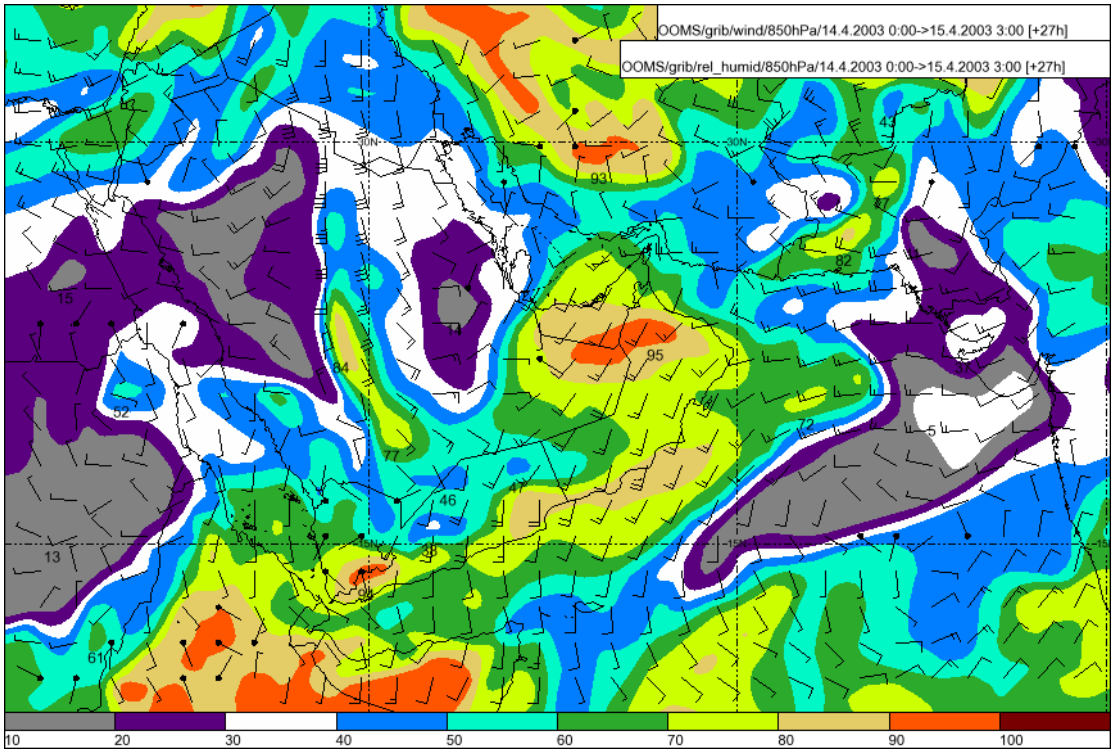
Factors Leading to the Severe Weather Encountered.



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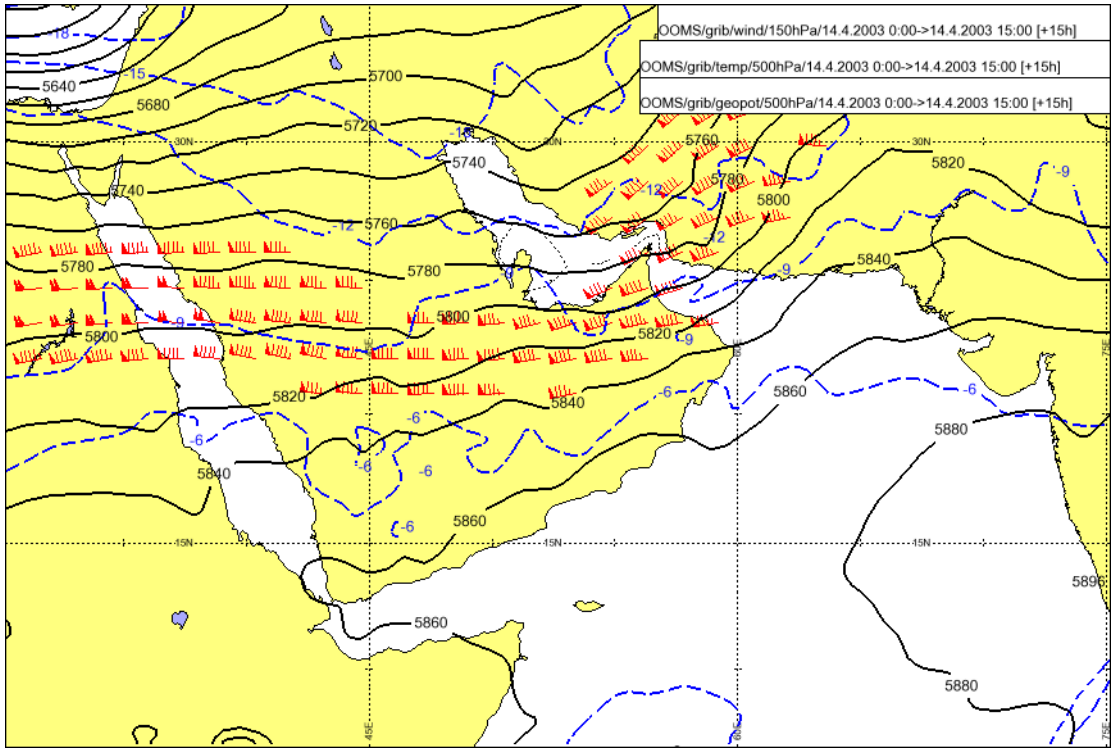
Factors Leading to the Severe Weather Encountered.

3- Curved Jet Stream



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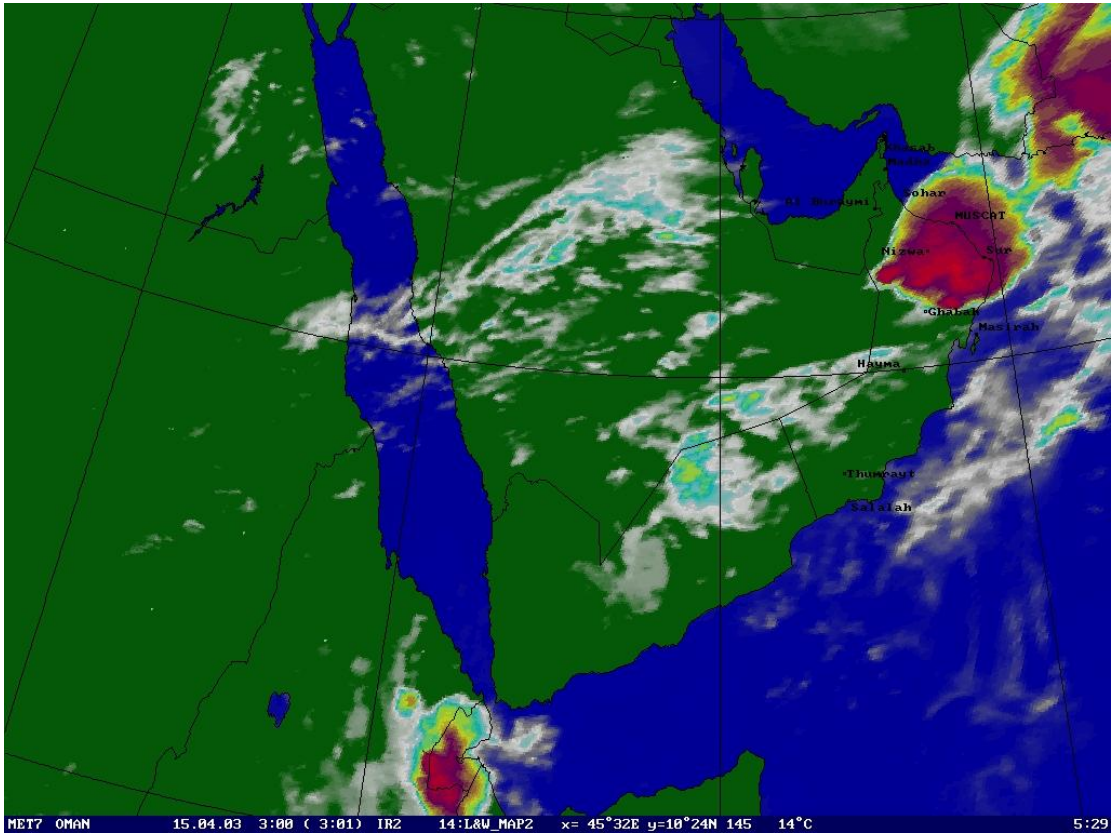
Satellite image taken at 03:00 UTC on Tuesday, April 15th, 2003.



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- End…….
- Thank you…….