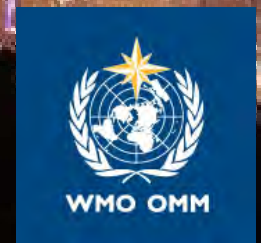


BMSEFFG SCM1, Tbilisi, Georgia, 28-30 June 2016

Case Study in North of Lebanon

Dated Jan 07 2015

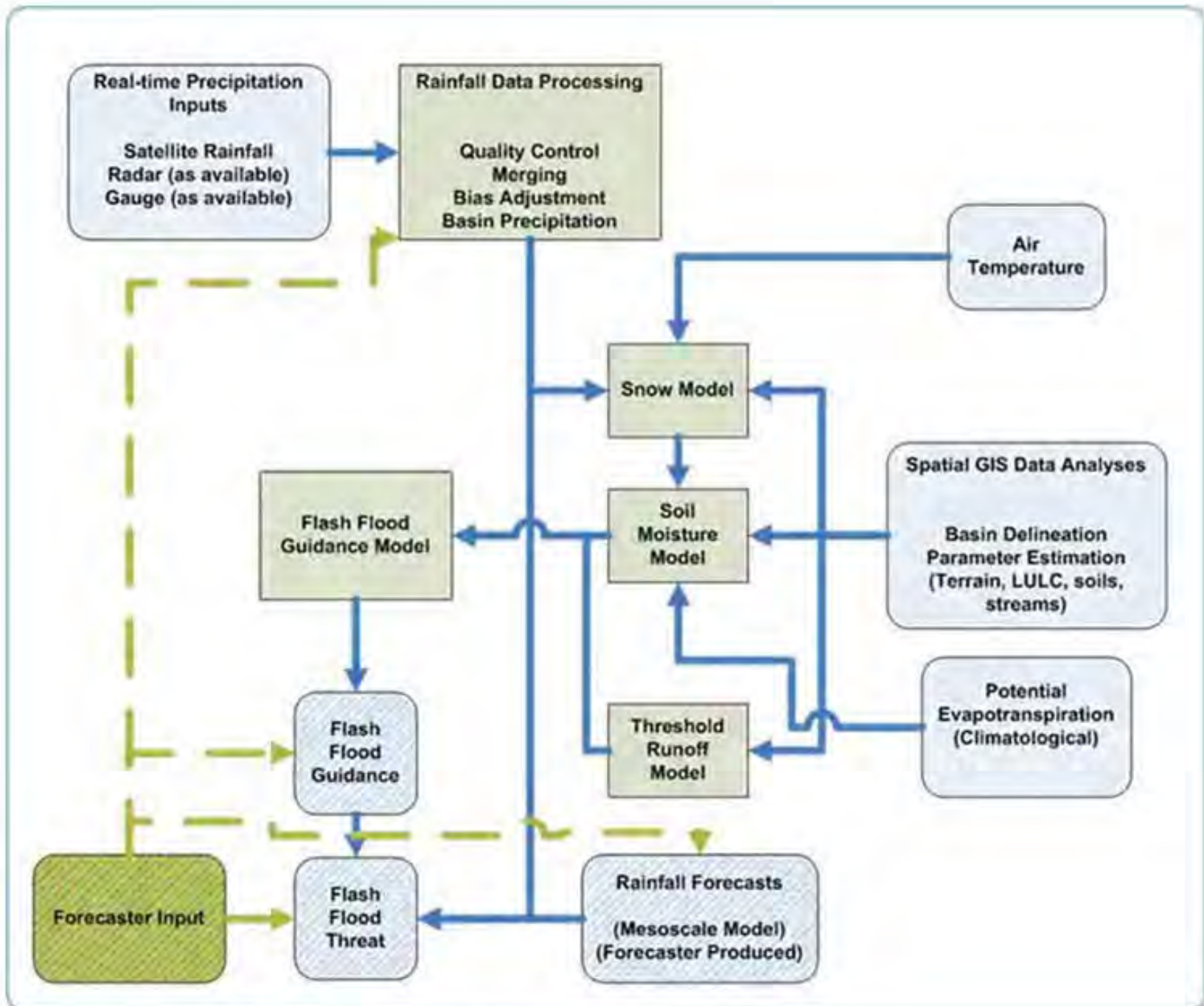


A) Synoptic Analysis

ARPEGE 50km2 resolution

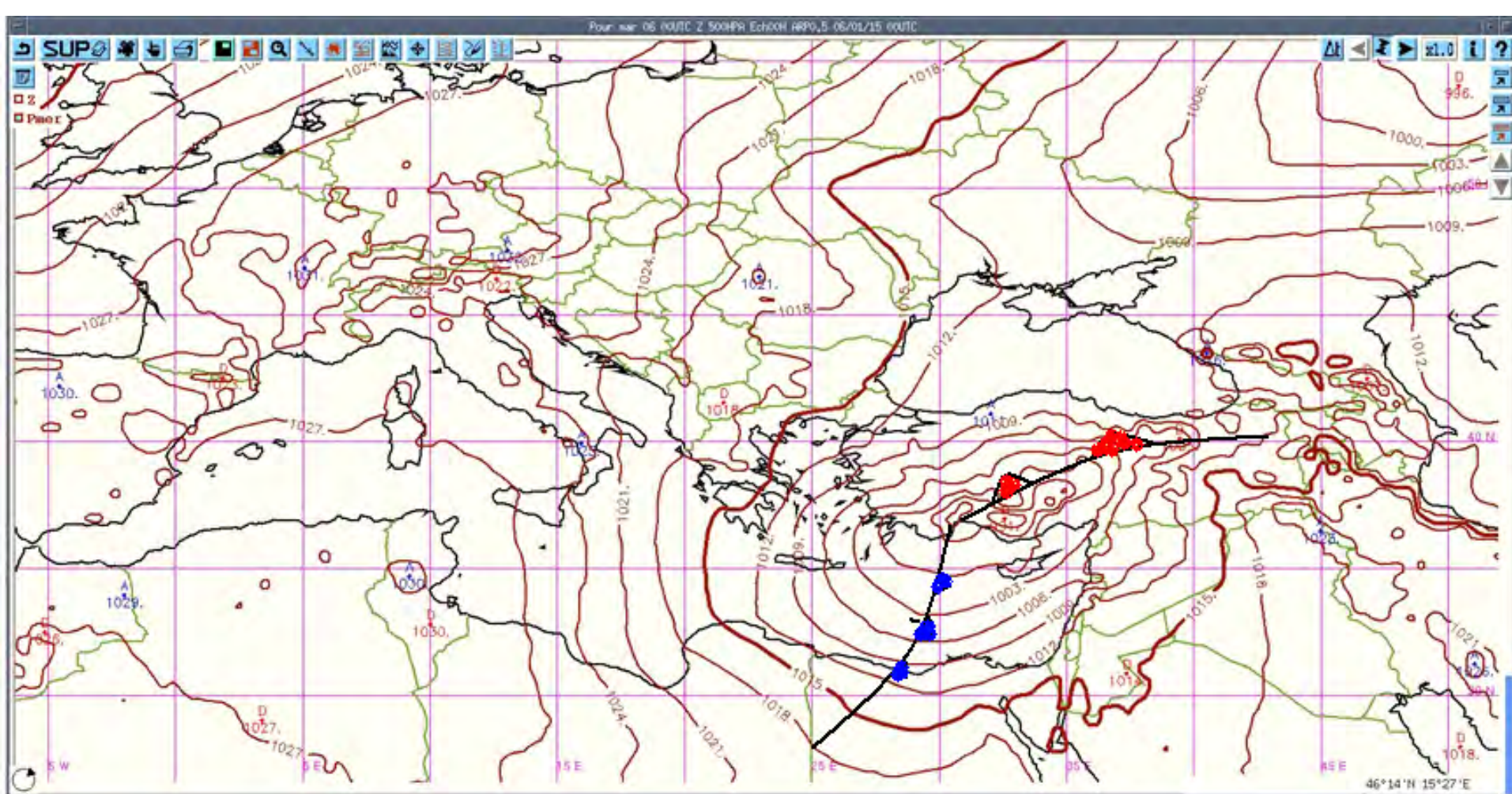
Synoptic analysis should include past two (2) days and future three (3) days of weather forecast outlook for the region by utilizing LAM and Global Models, including:

- **Surface Analysis;**
 - o Current weather,
 - o Low pressure centers and associated frontal system and movement with time,
 - o Pressure tendencies,
 - o Winds.
 - o Precipitation types and amounts.
- **850 hPa Analysis;**
 - o Trough and Ridges,
 - o Warm and cold air advection,
 - o Low level convergence,
 - o Winds directions,
 - o Humidity.
- **500 hPa Analysis;**
 - o Trough and Ridges,
 - o Warm and cold air advection,
 - o Convergence and divergence areas,
- **JET Streaks;**
 - o JET locations and centers,
 - o Movement with time.
- **Satellite Images;**
 - o VIS and IR animations..
- **Comparison of various models precipitations;**
 - o ECMWF,
 - o ALARO,
 - o WRF.



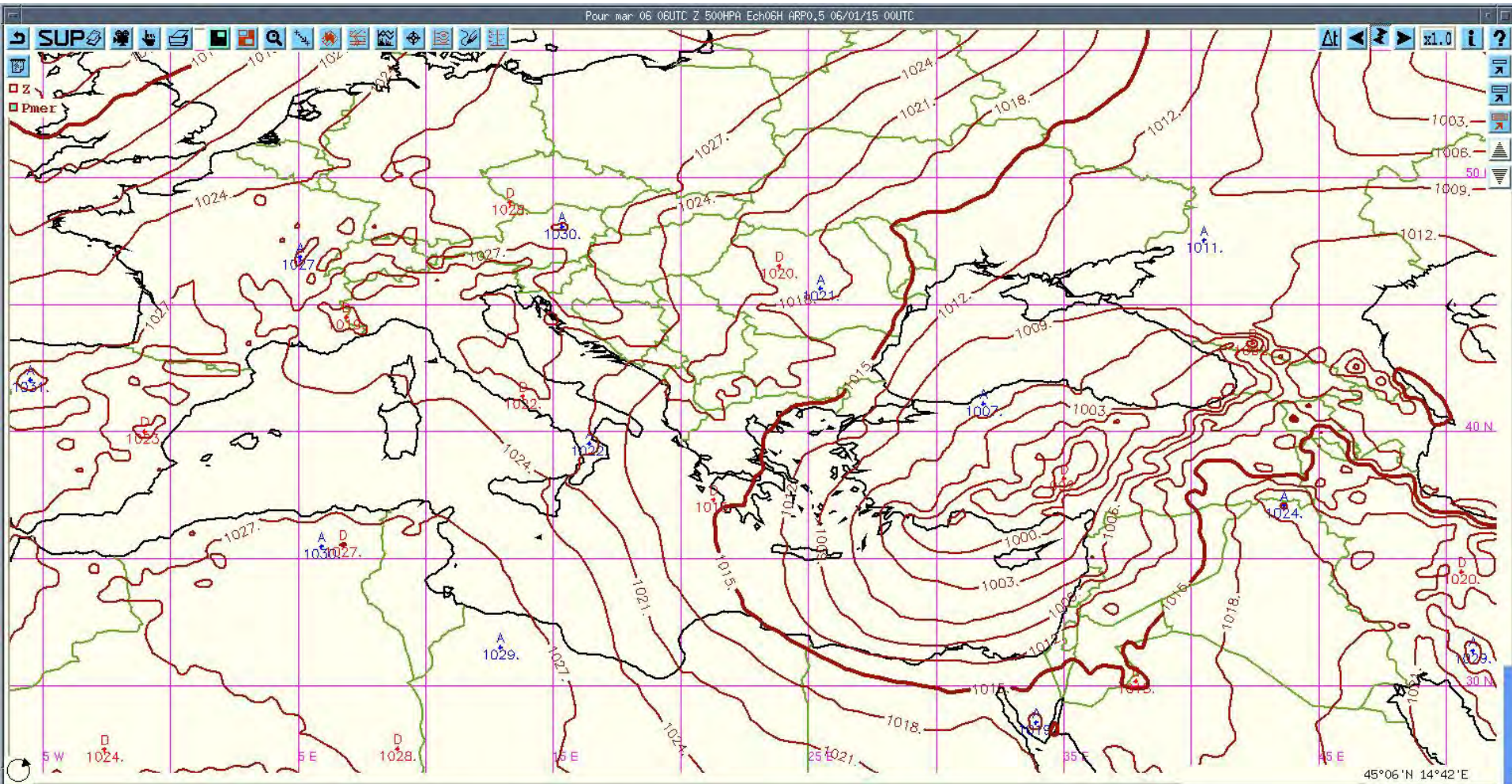
Surface chart 6/1/2015 00UTC

Deep frontal depression over Cyprus and south of Turkey with centre 997 hpa is affecting East Mediterranean including Lebanon.



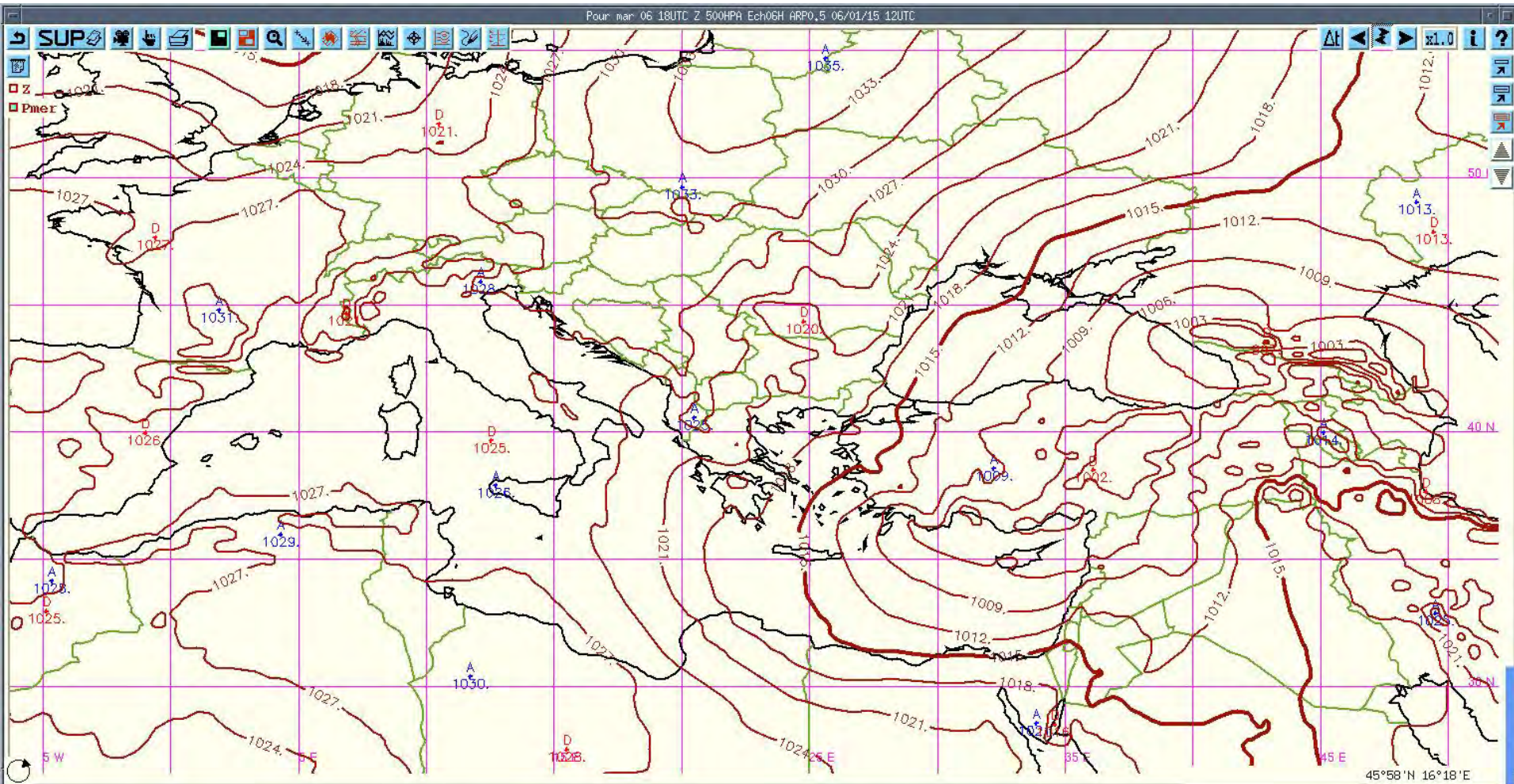
Surface chart 06/01/2015 06UTC

Very cold air is coming from north East of Europe passing East Mediterranean with south westerly flow over Lebanon.



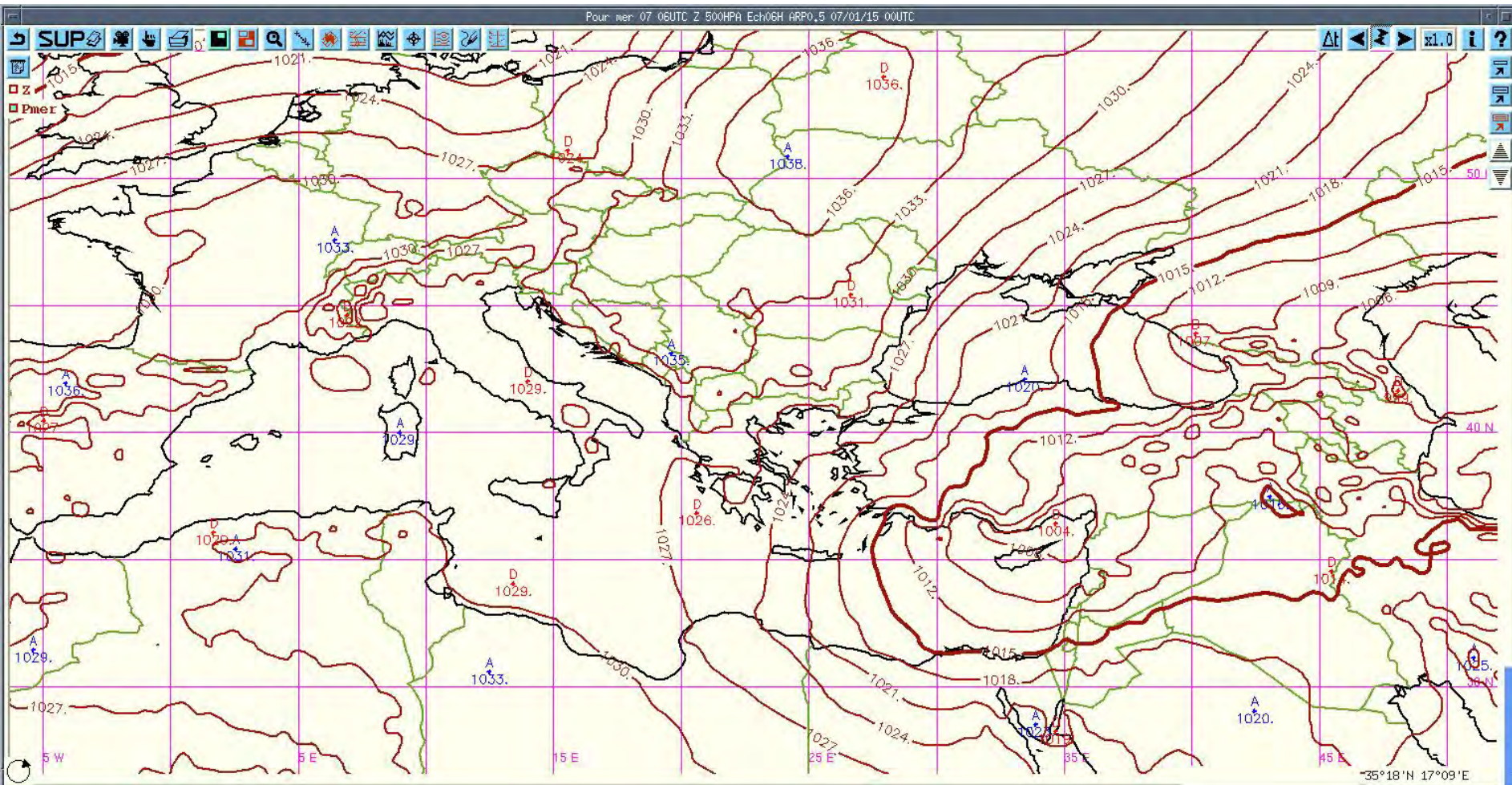
Surface chart

06/01/2015 18UTC



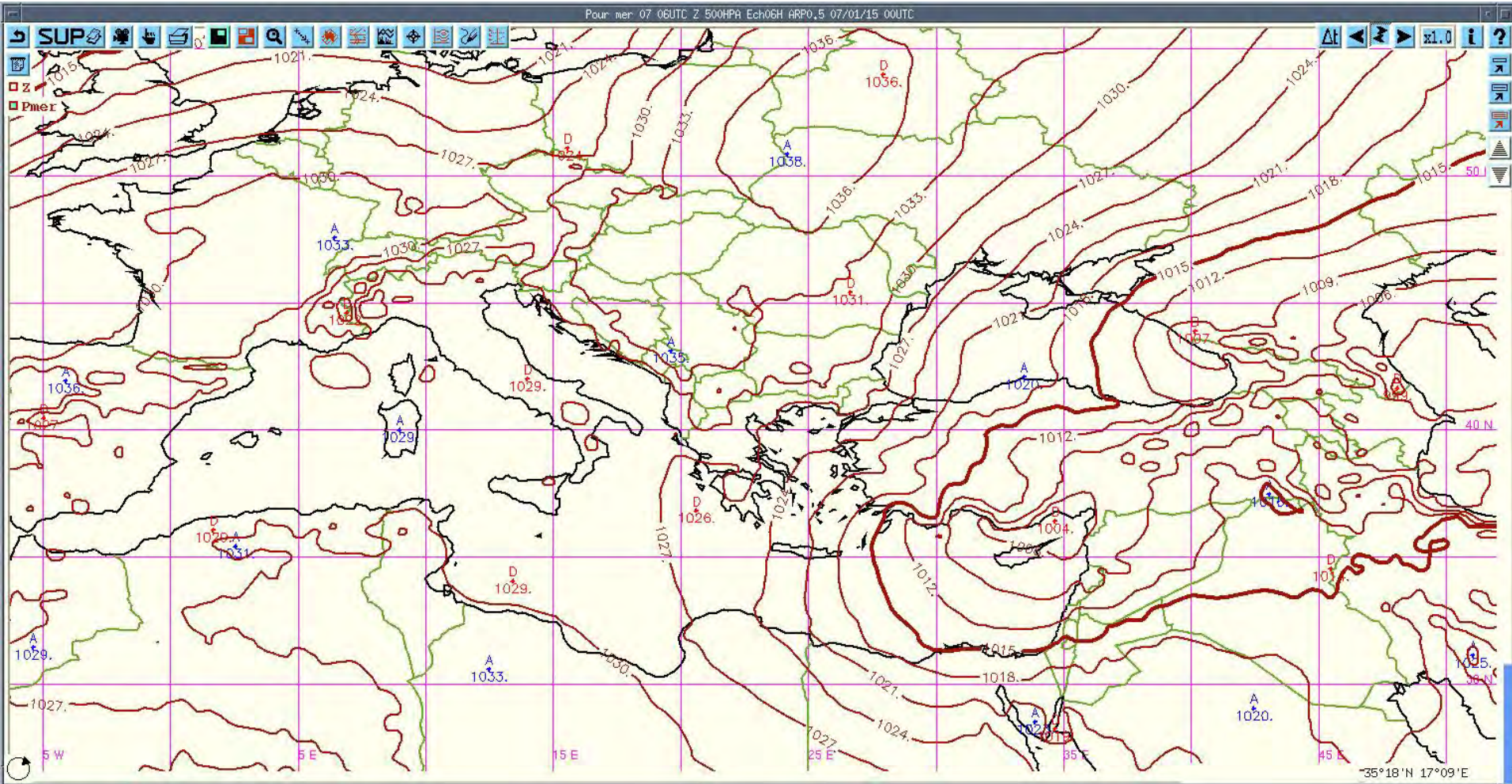
Surface chart

07/01/2015 00UTC



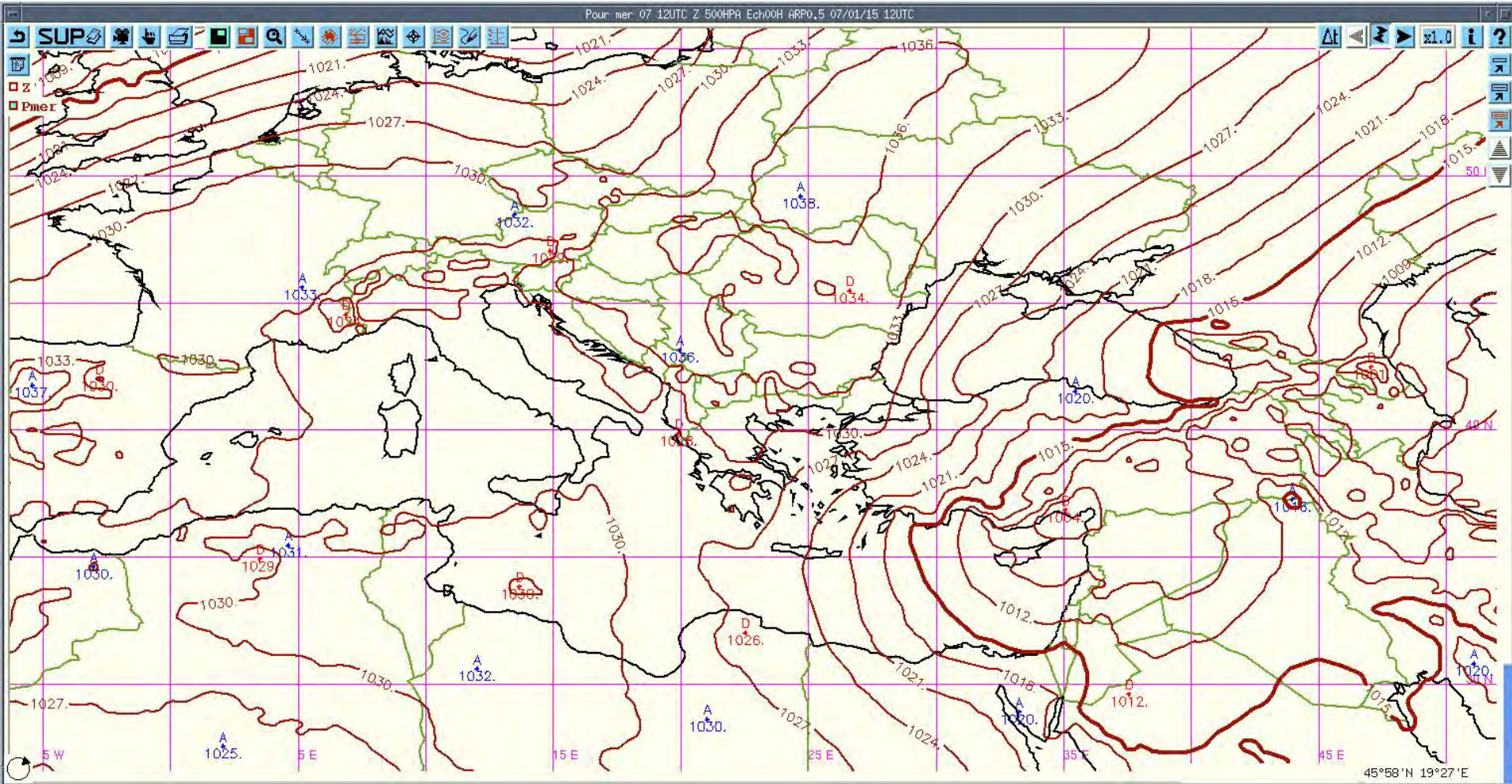
Surface chart

07/01/2015 06UTC



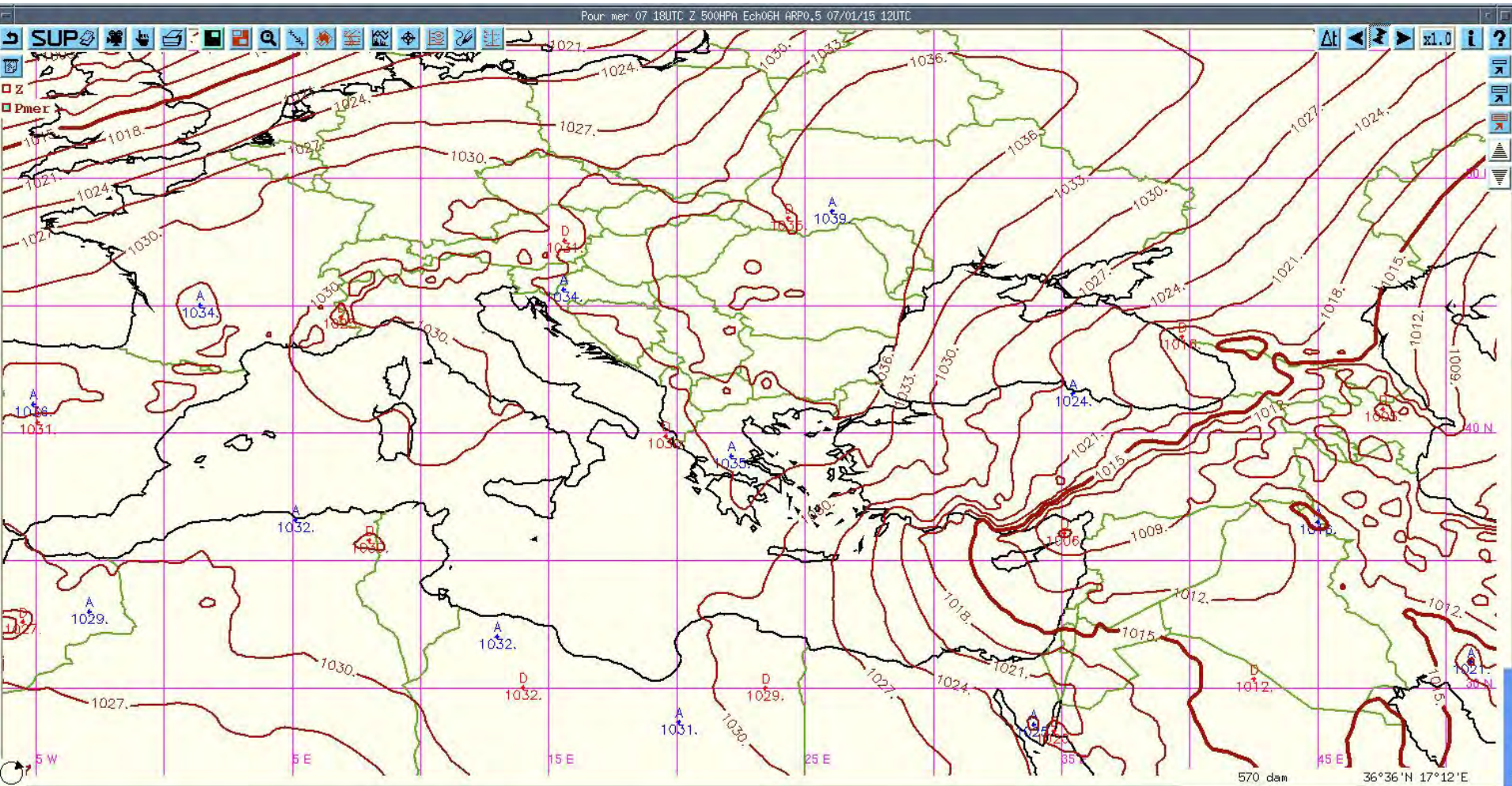
Surface chart

07/01/2015 12UTC



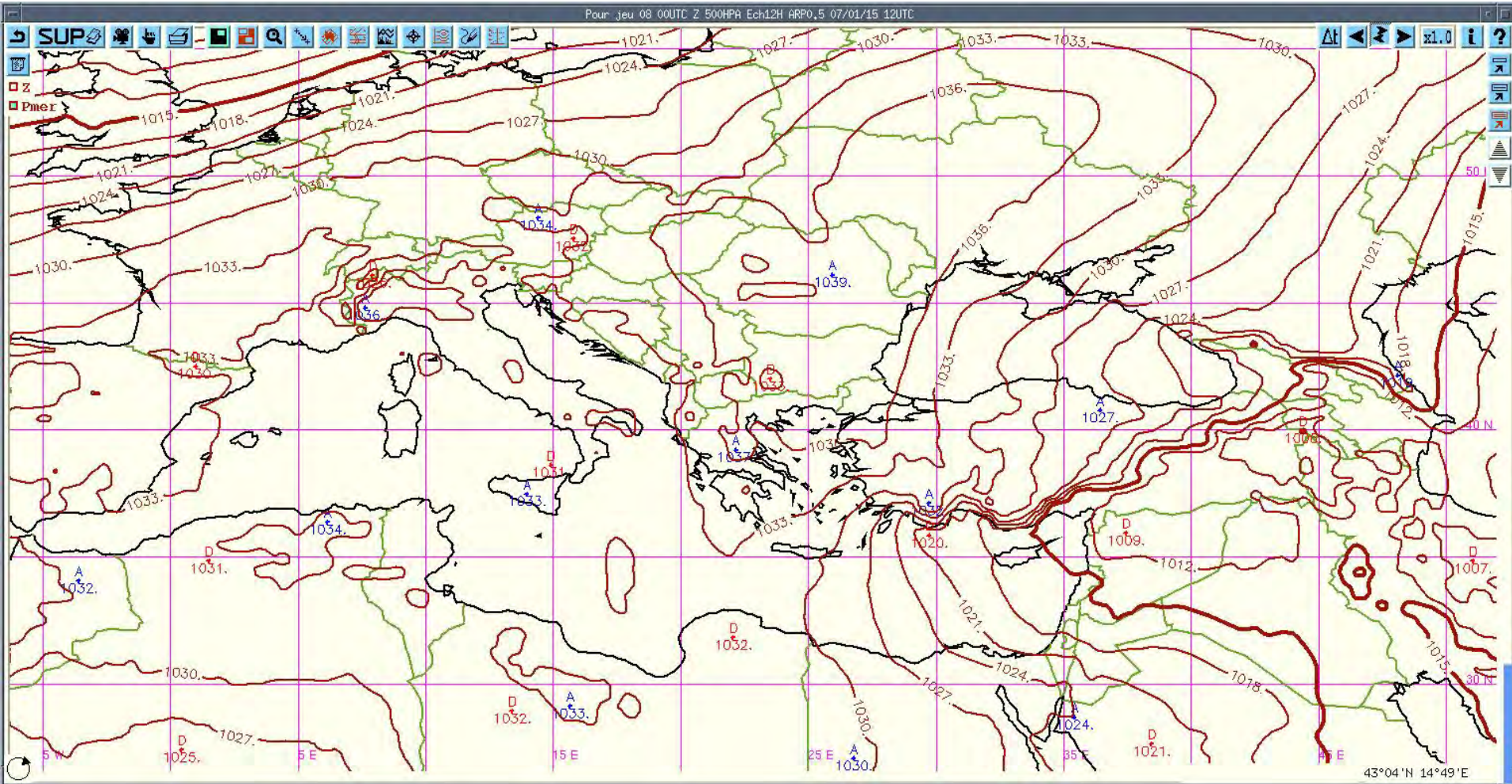
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07/01/2015 18UTC



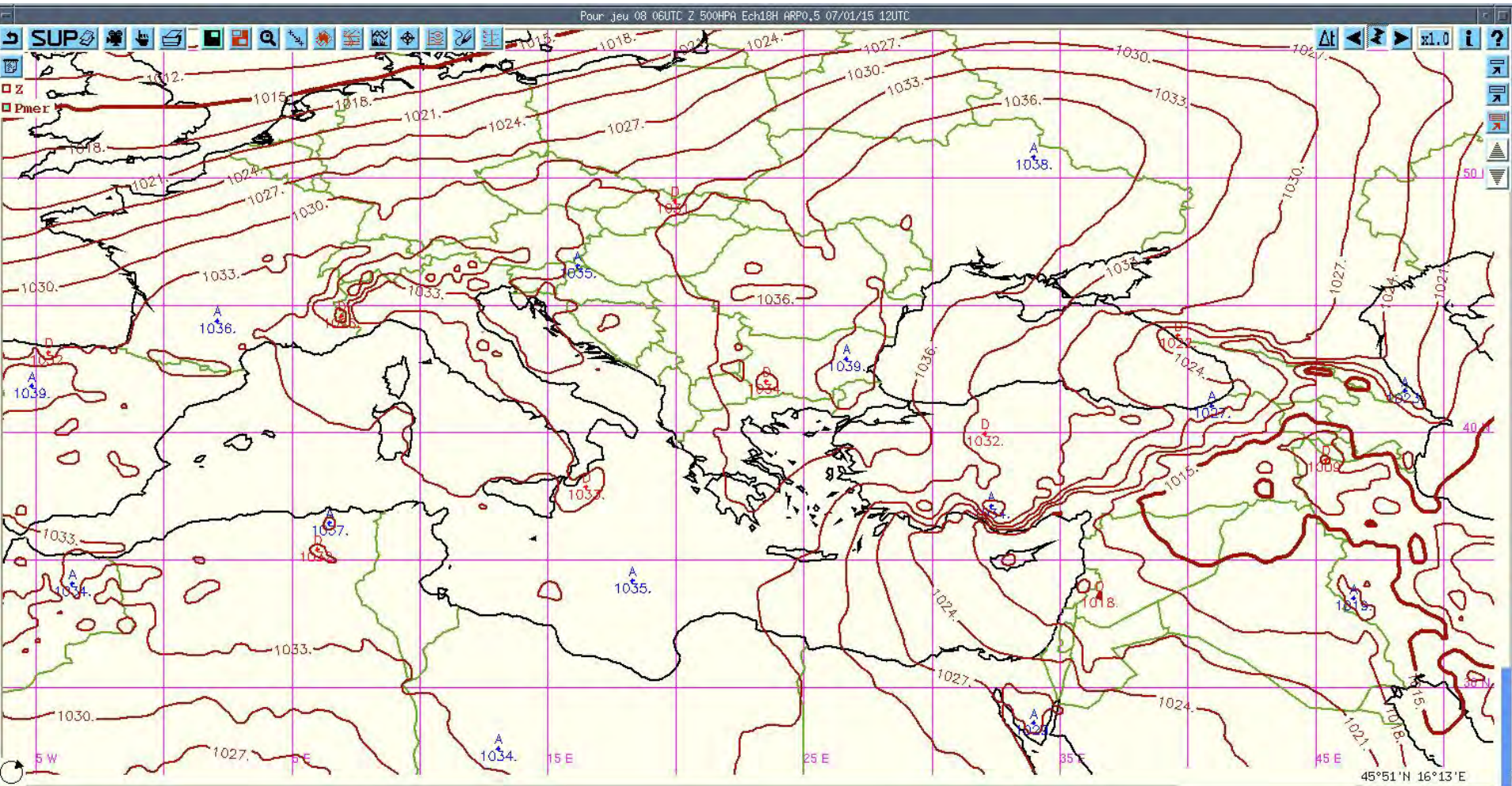
Surface chart

08/01/2015 00UTC



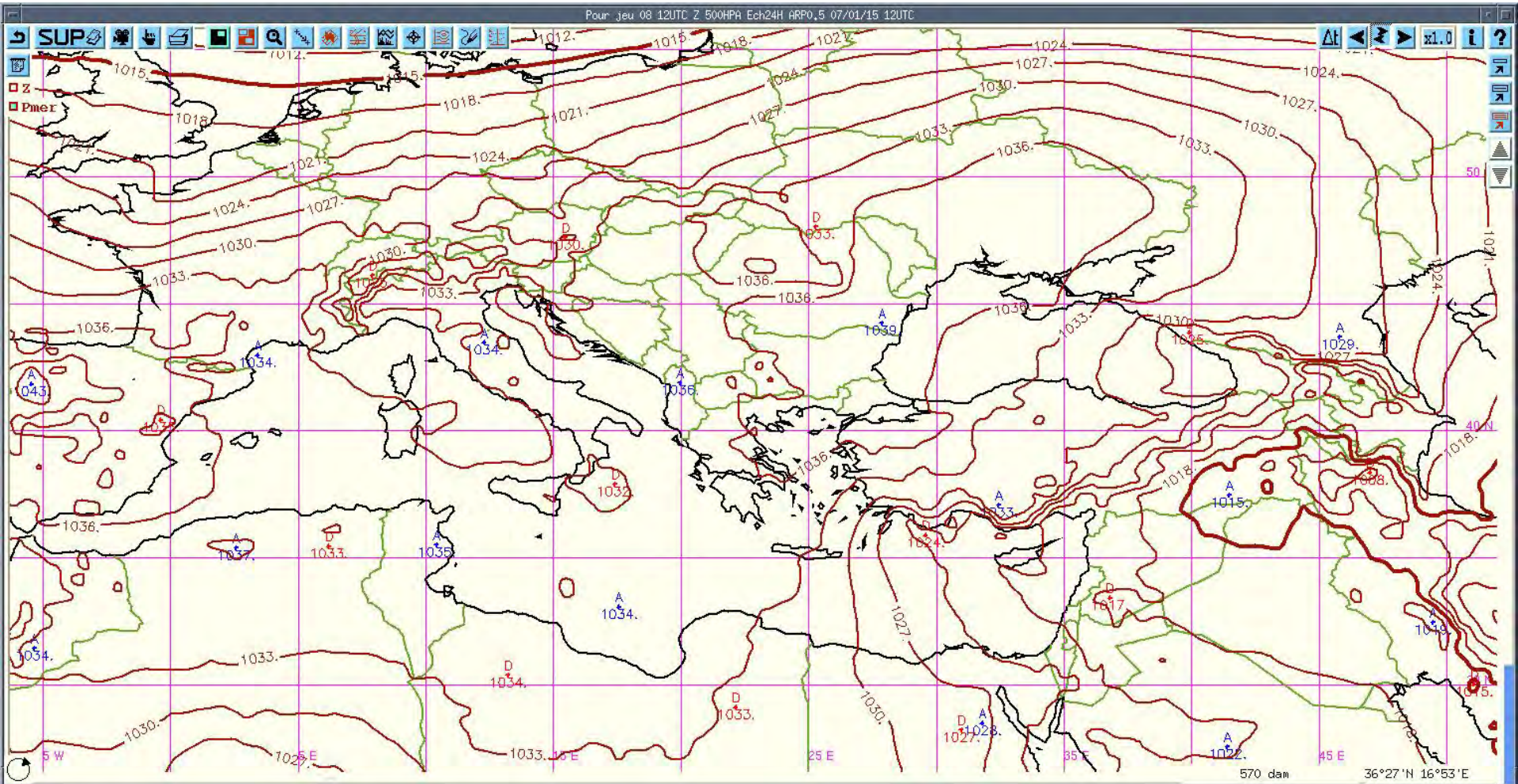
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08/01/2015 00UTC



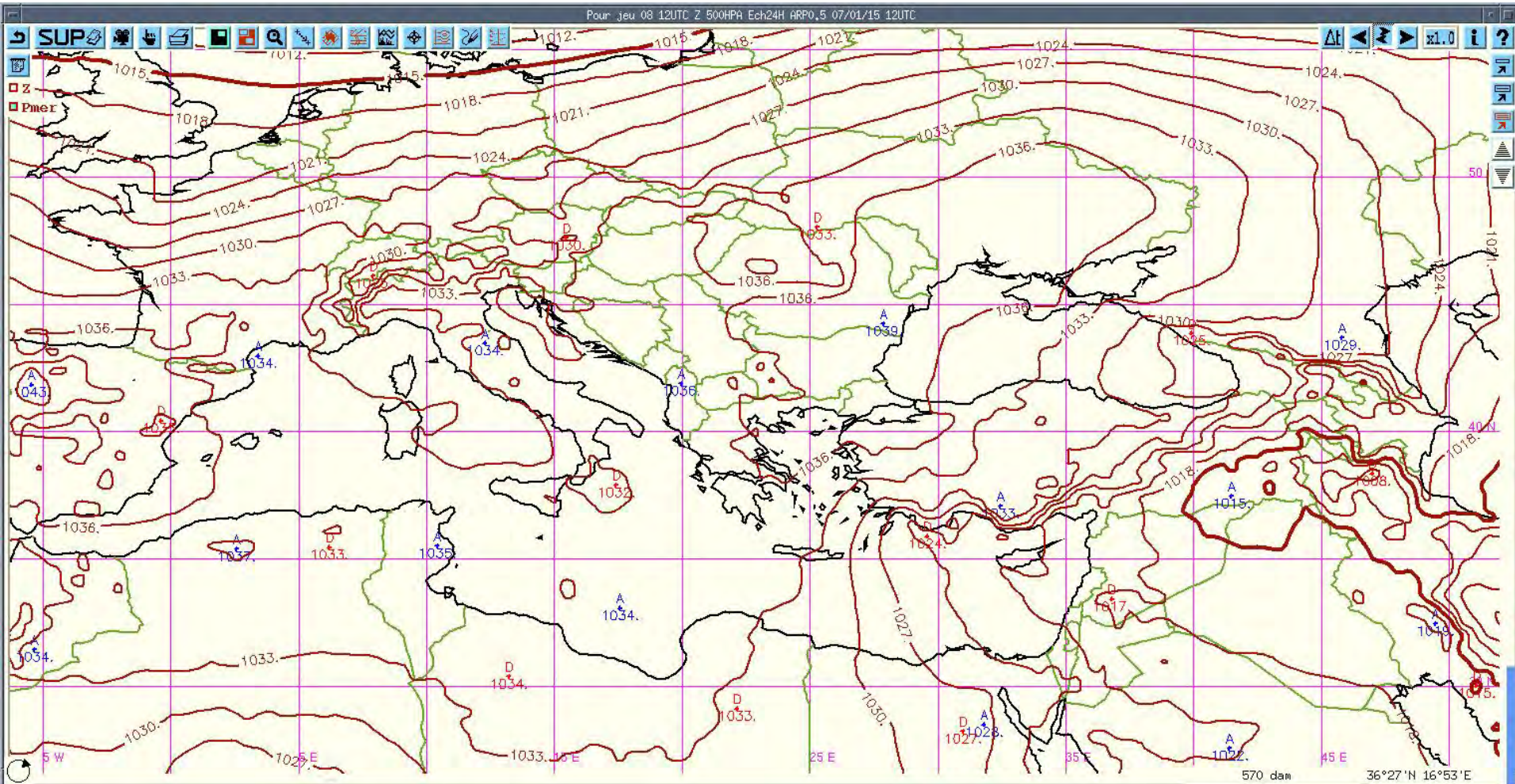
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08/01/2015 12UTC

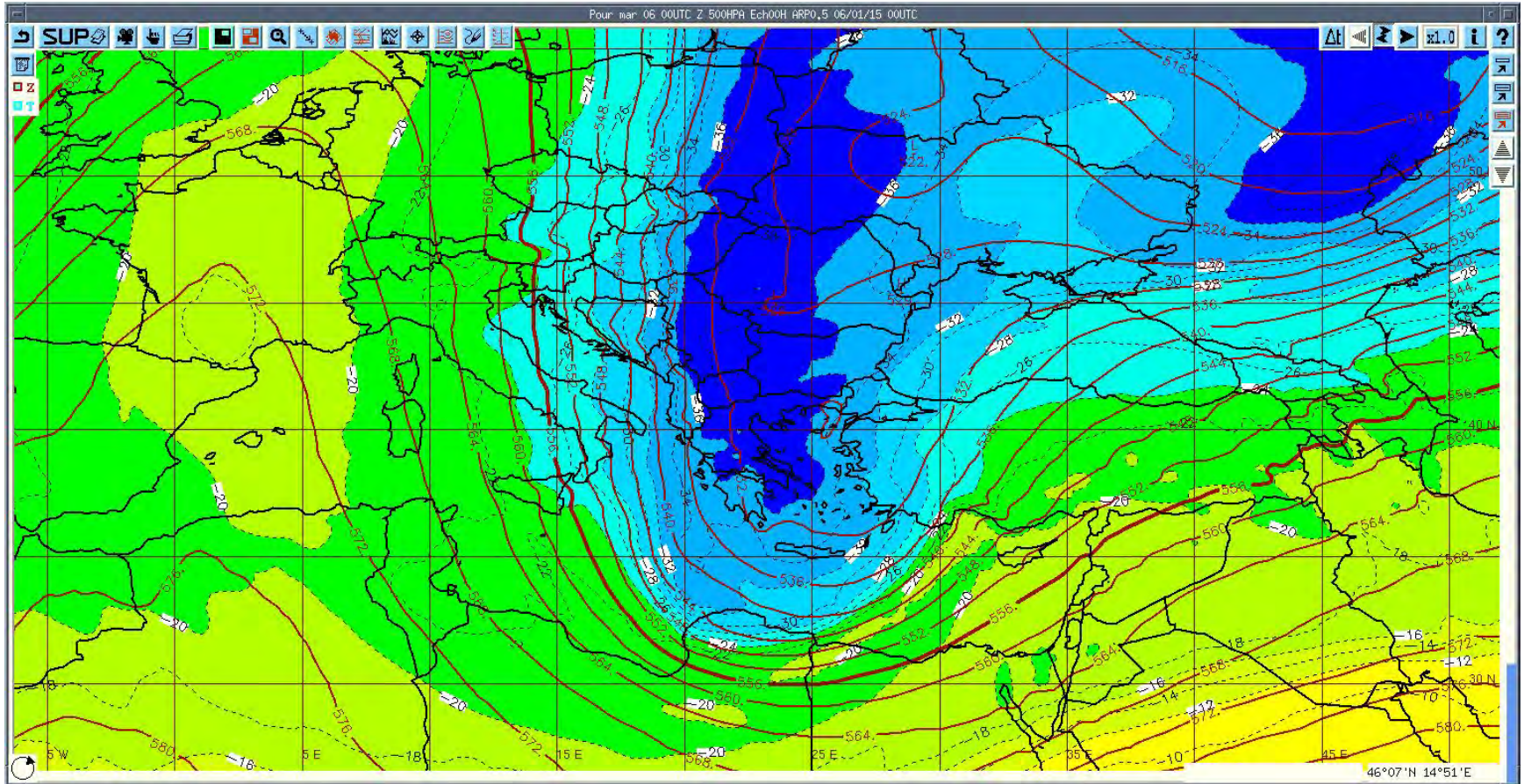


Surface chart

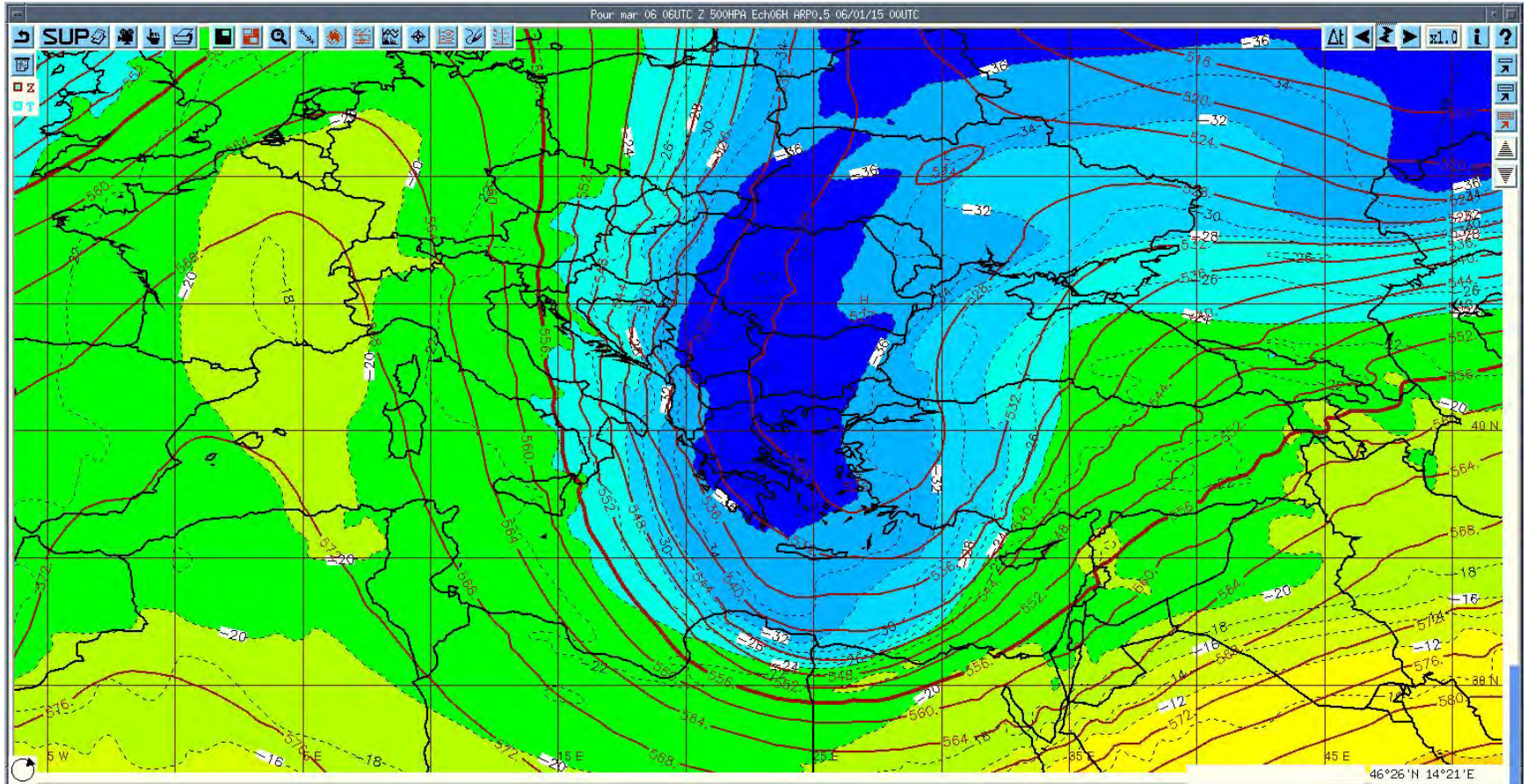
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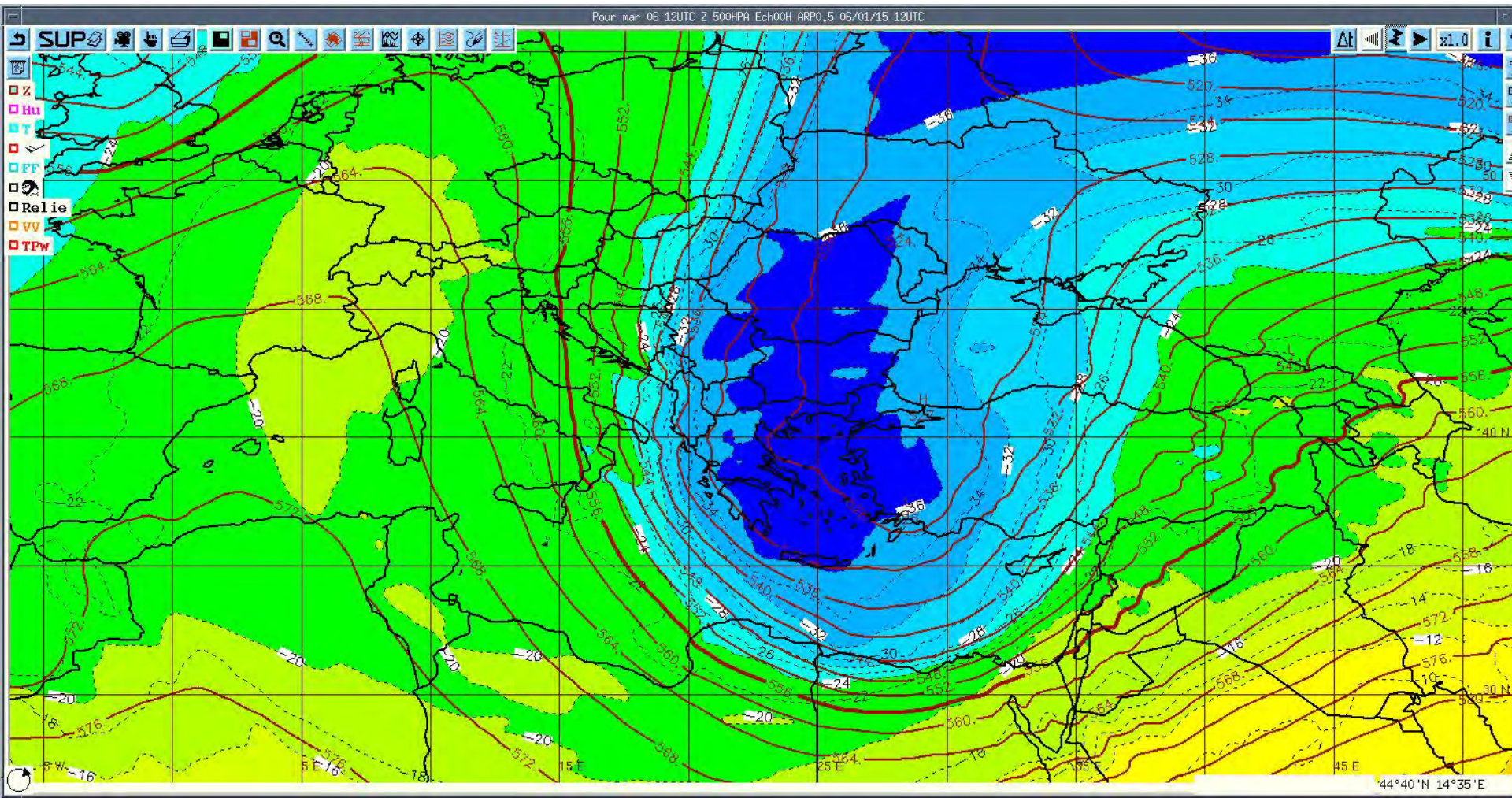
ARPEGE 500 hpa chart 06/01/2015 00UTC



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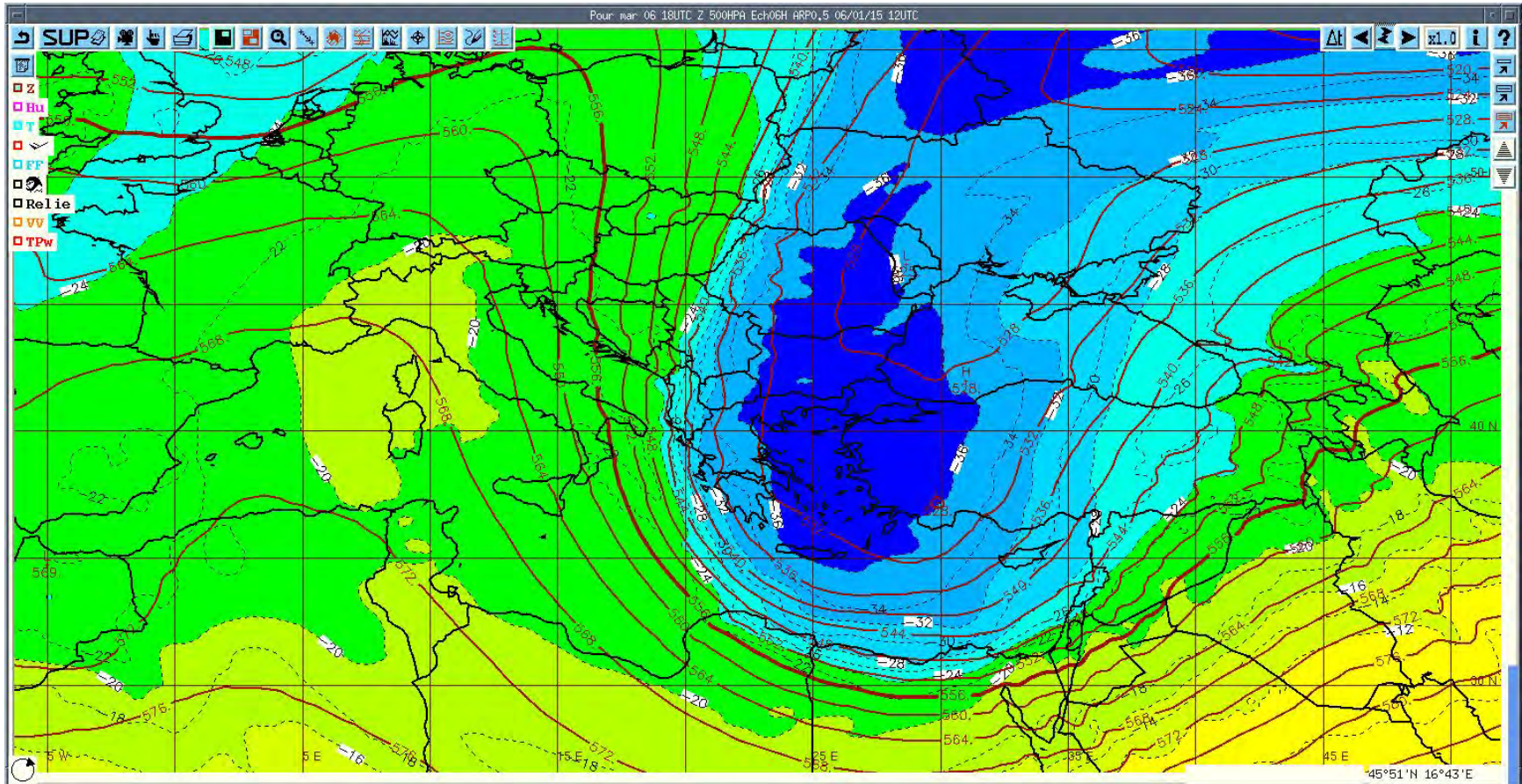


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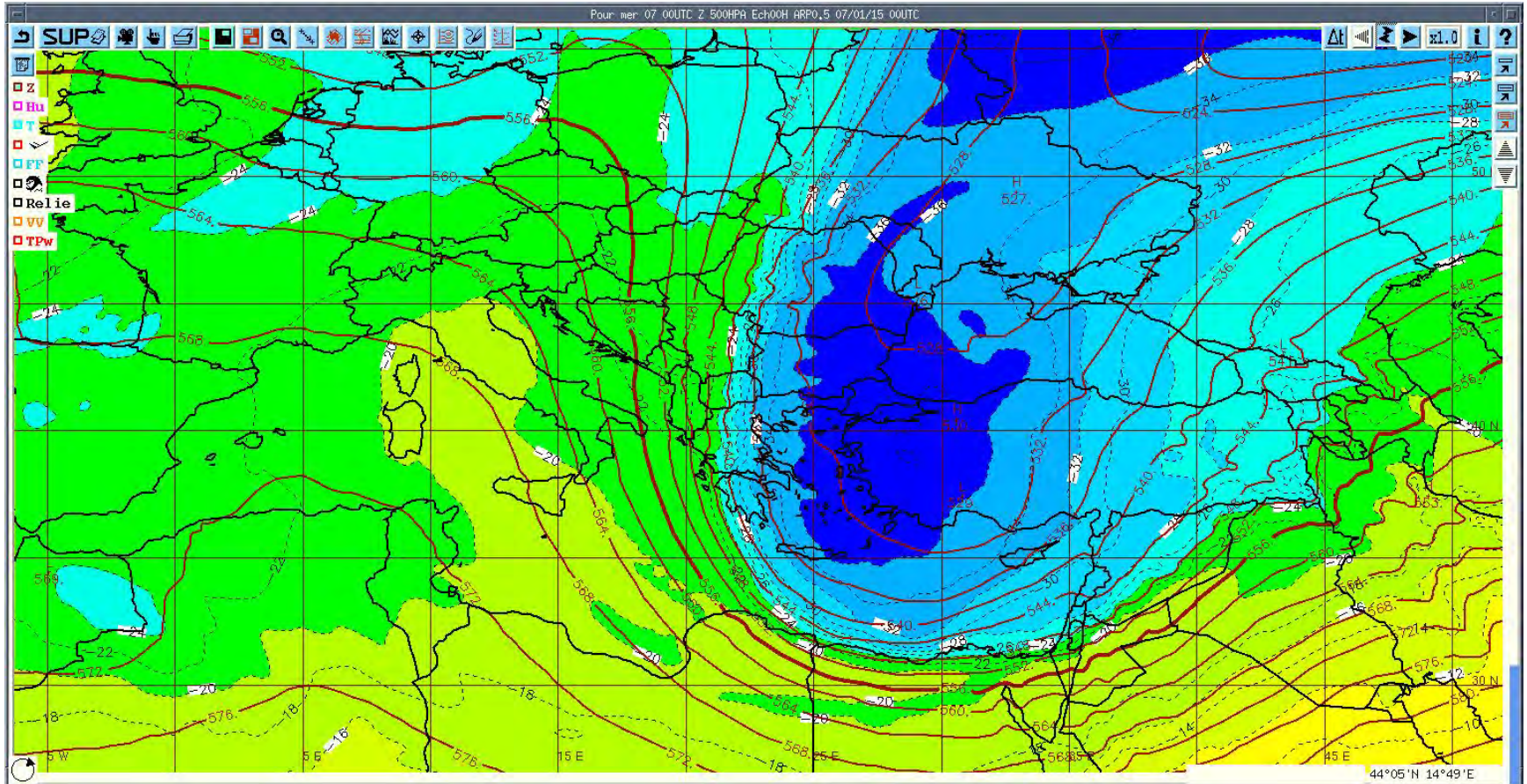


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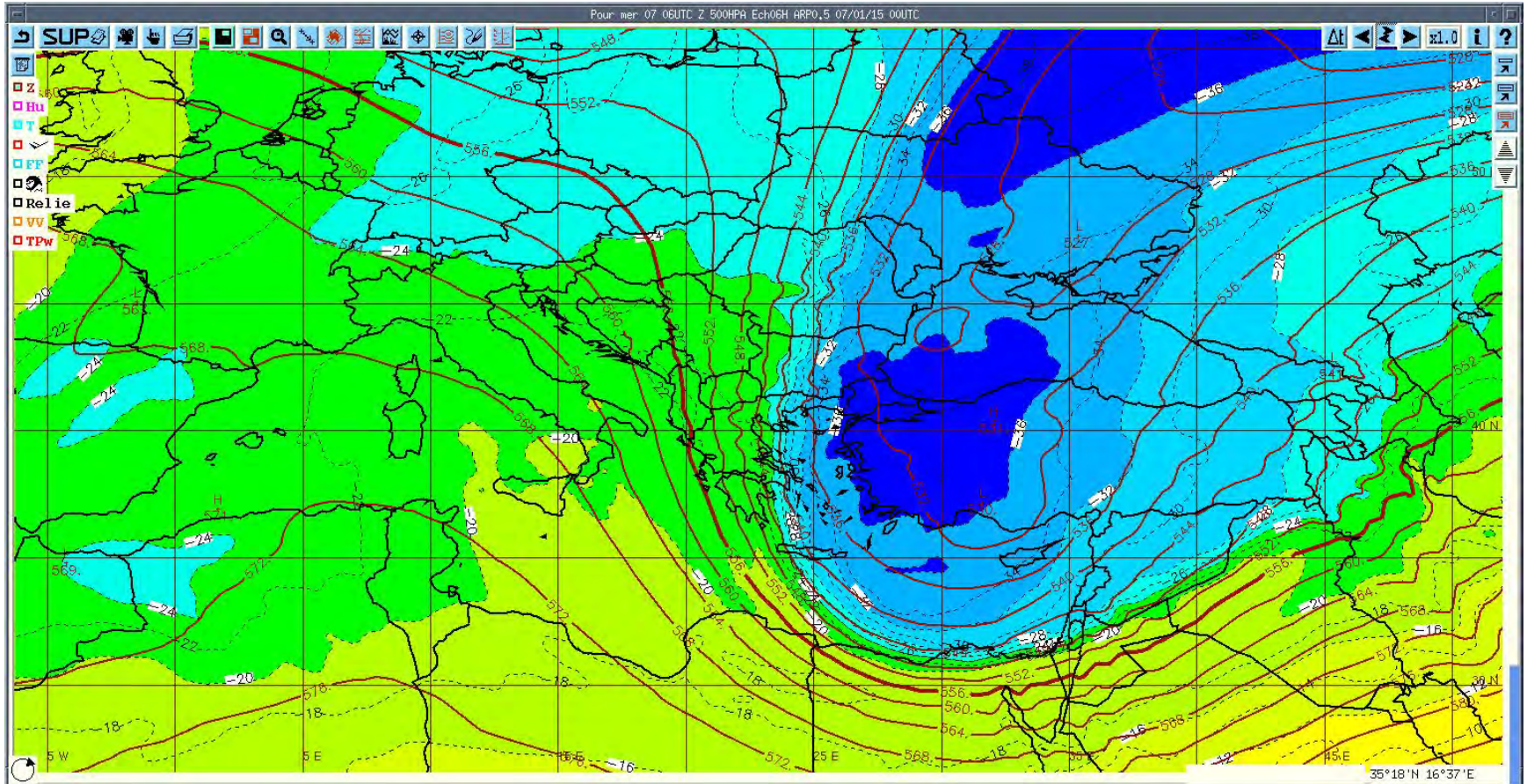
Deep upper low over East of Europe with very cold air extend to East Mediterranean passing through Lebanon



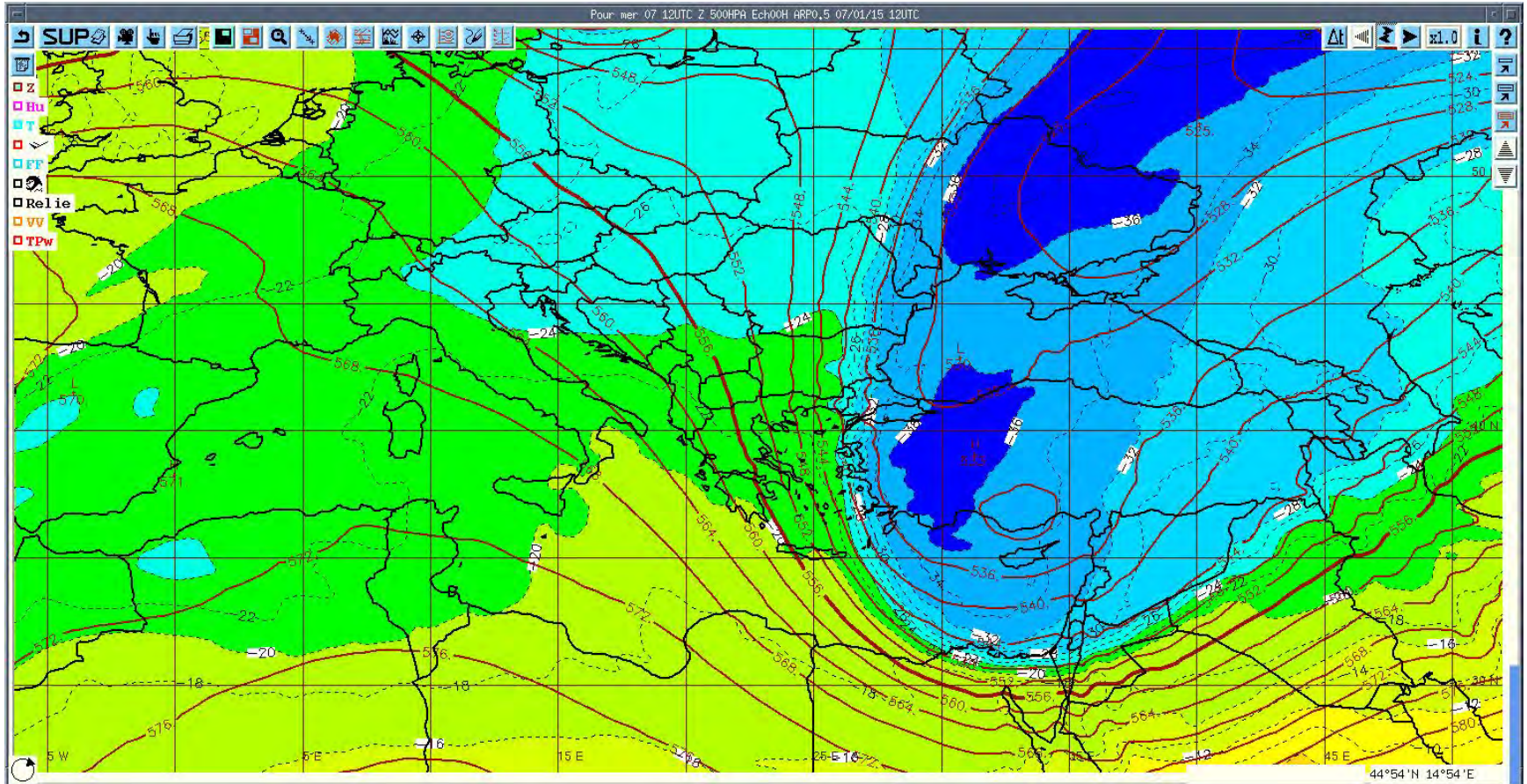
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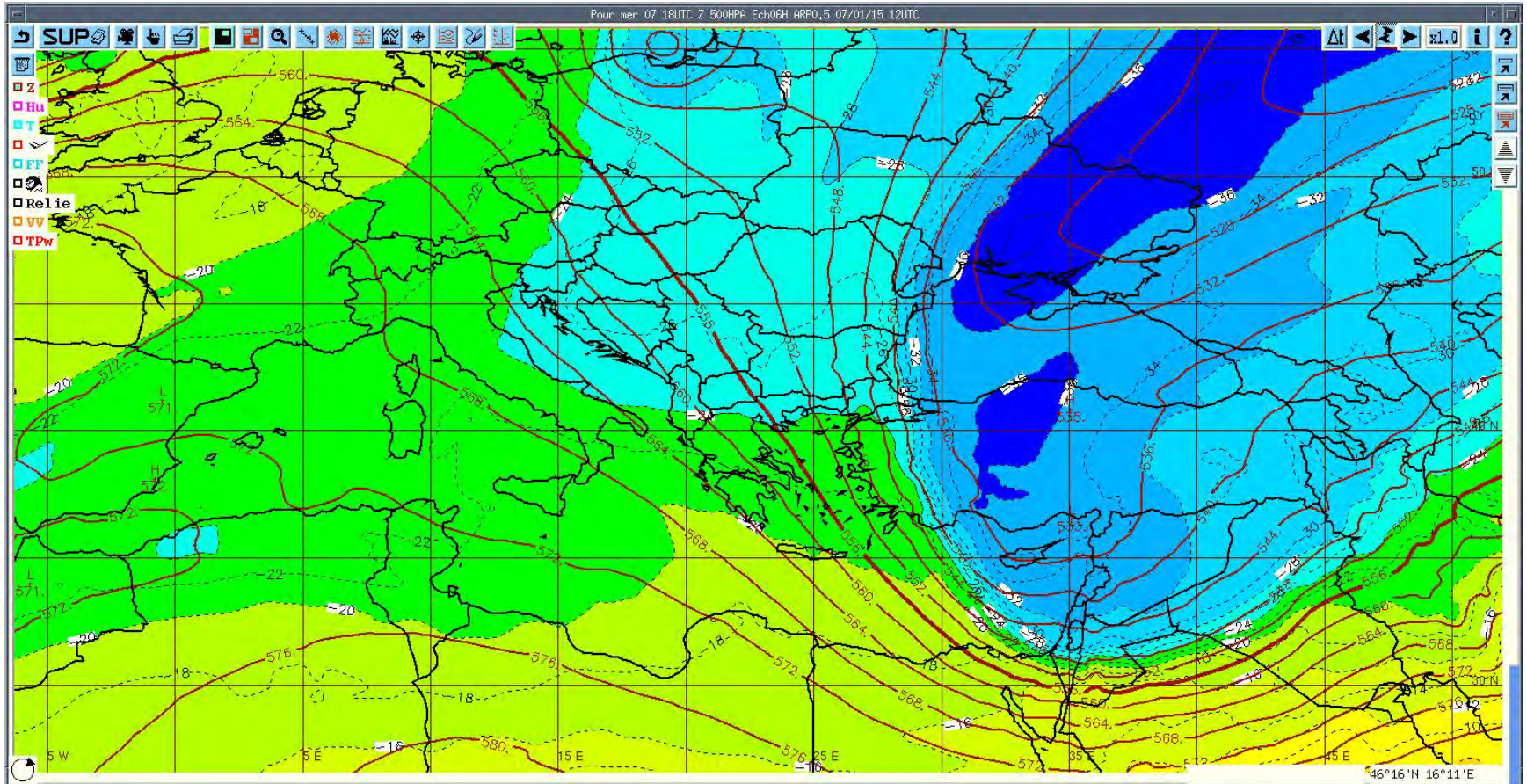
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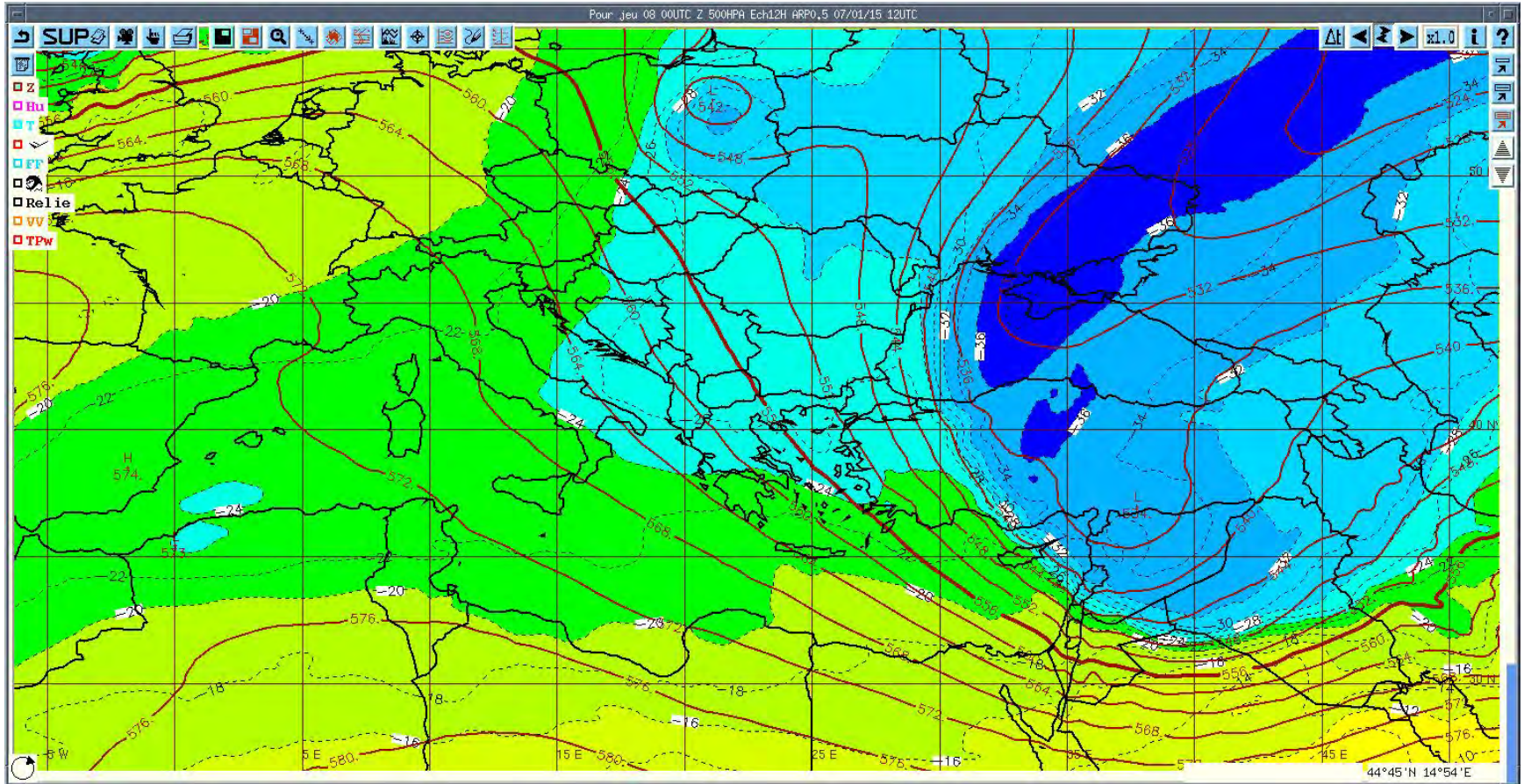
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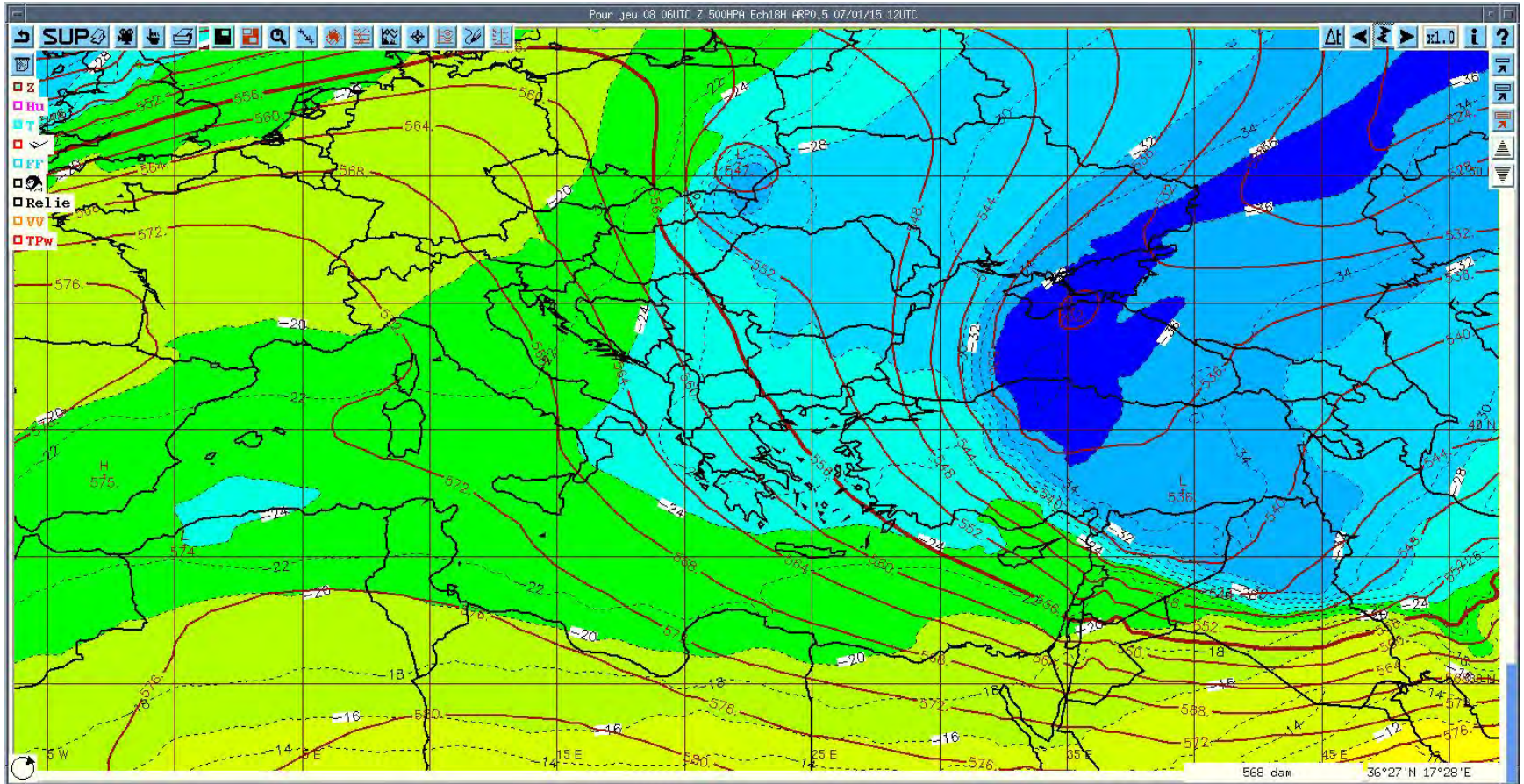
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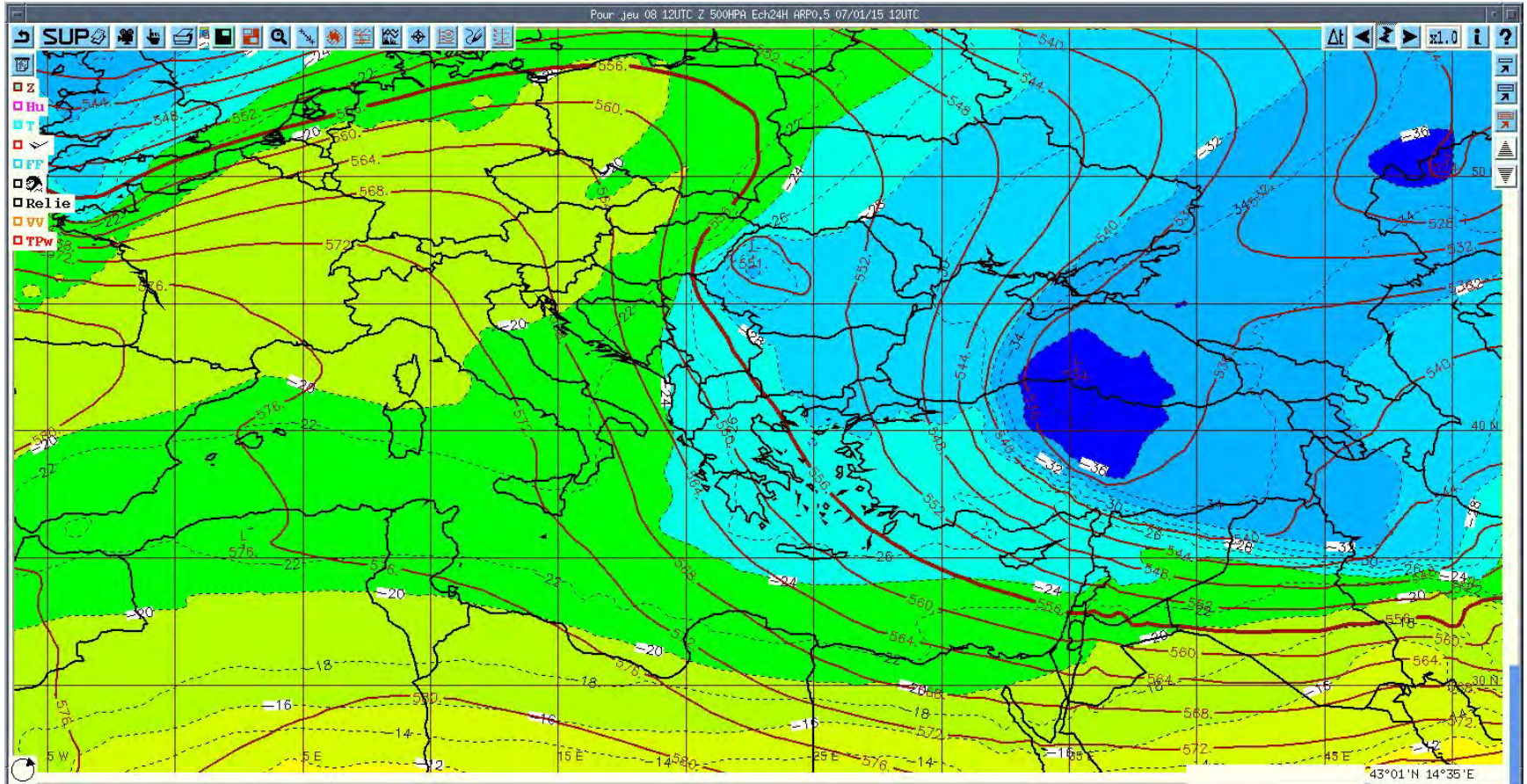
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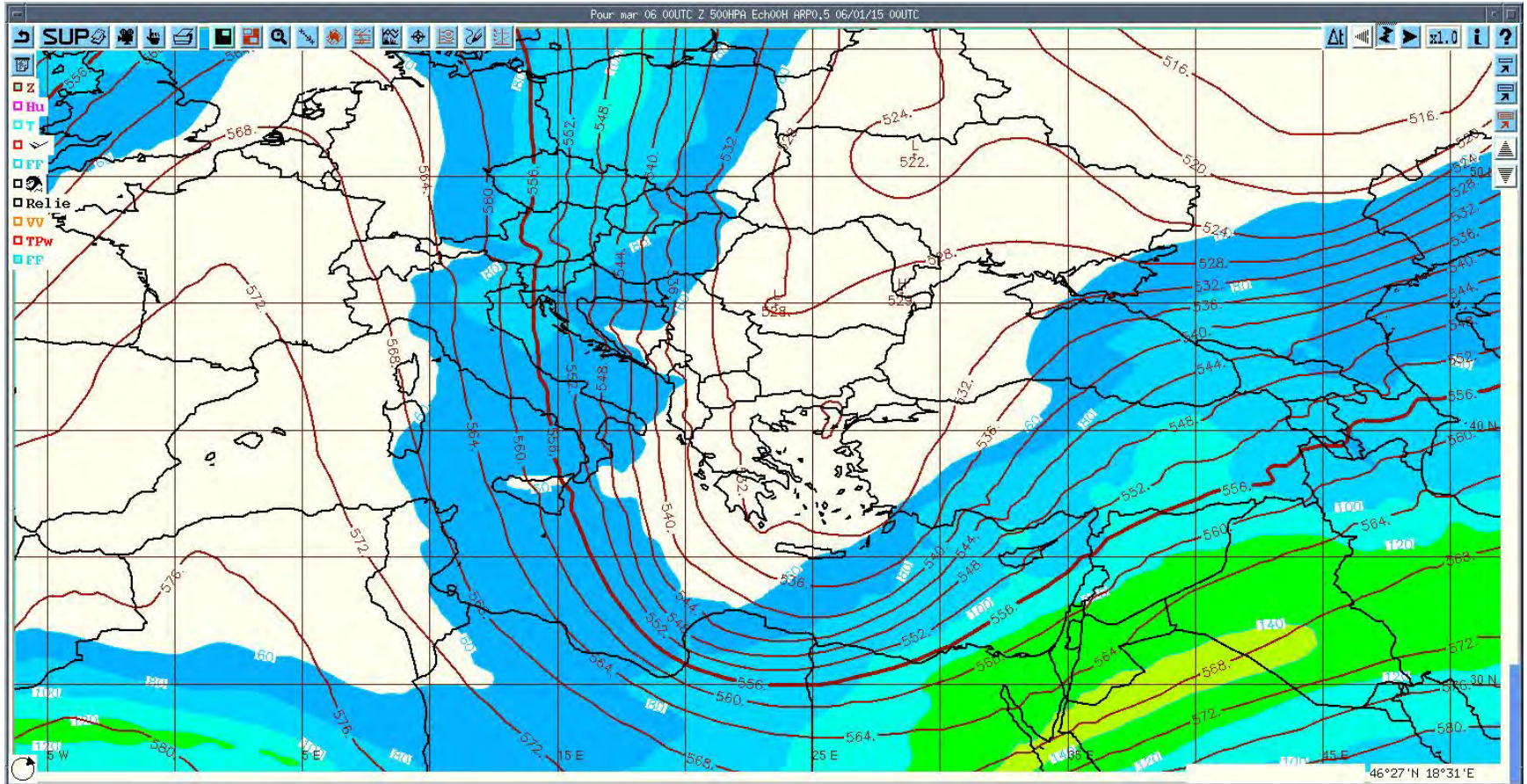
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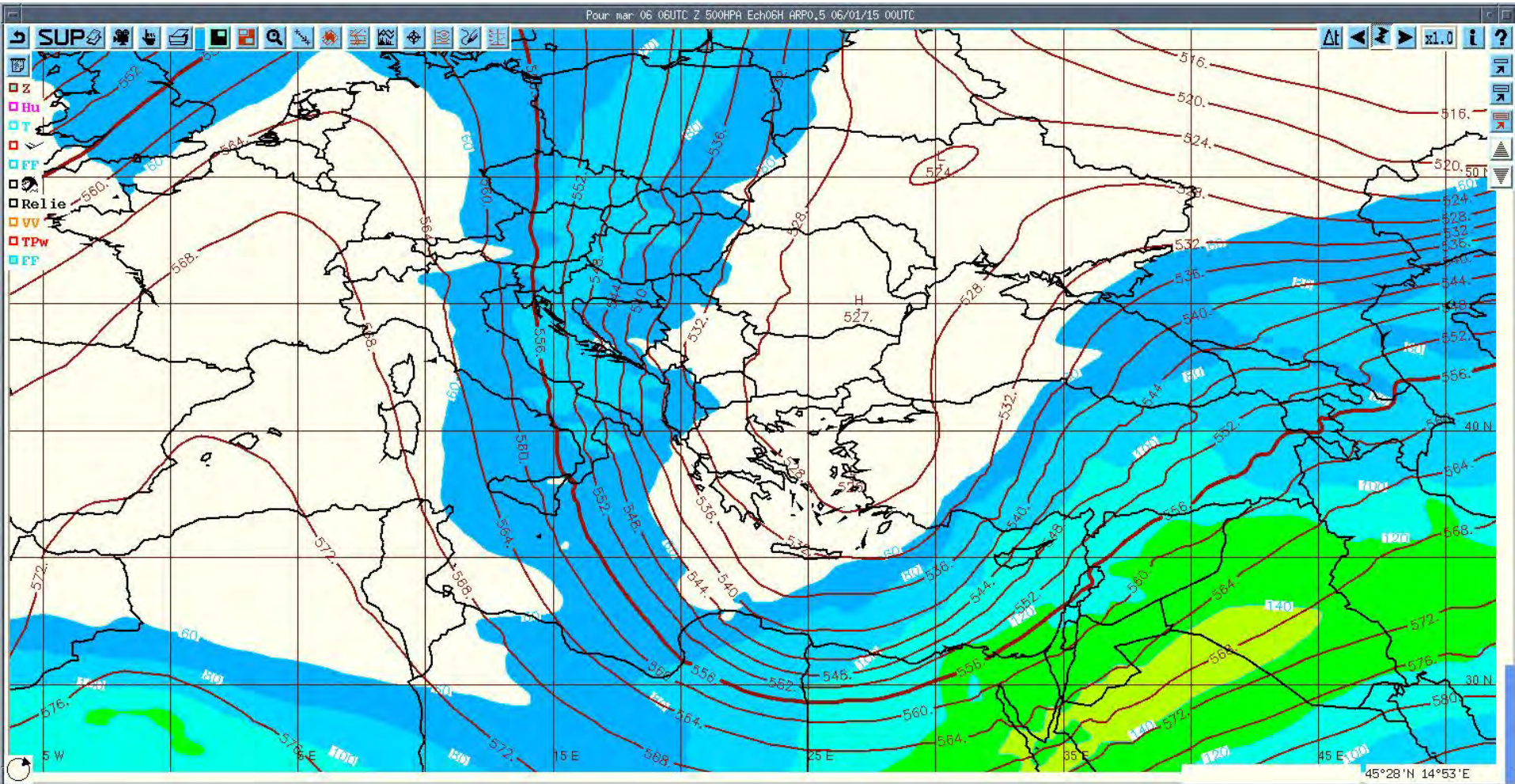
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Jet 06/01/2015 00UTC

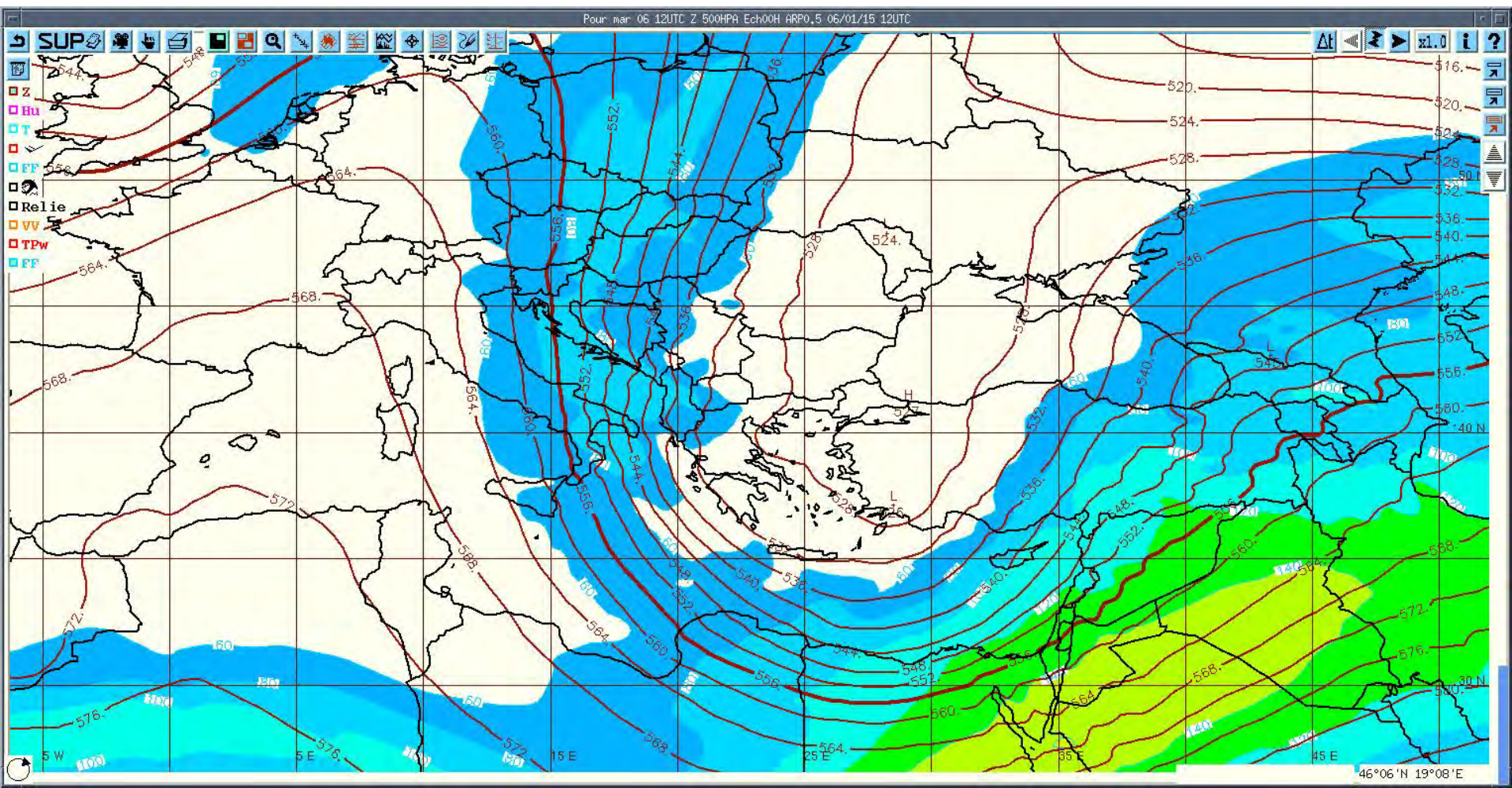


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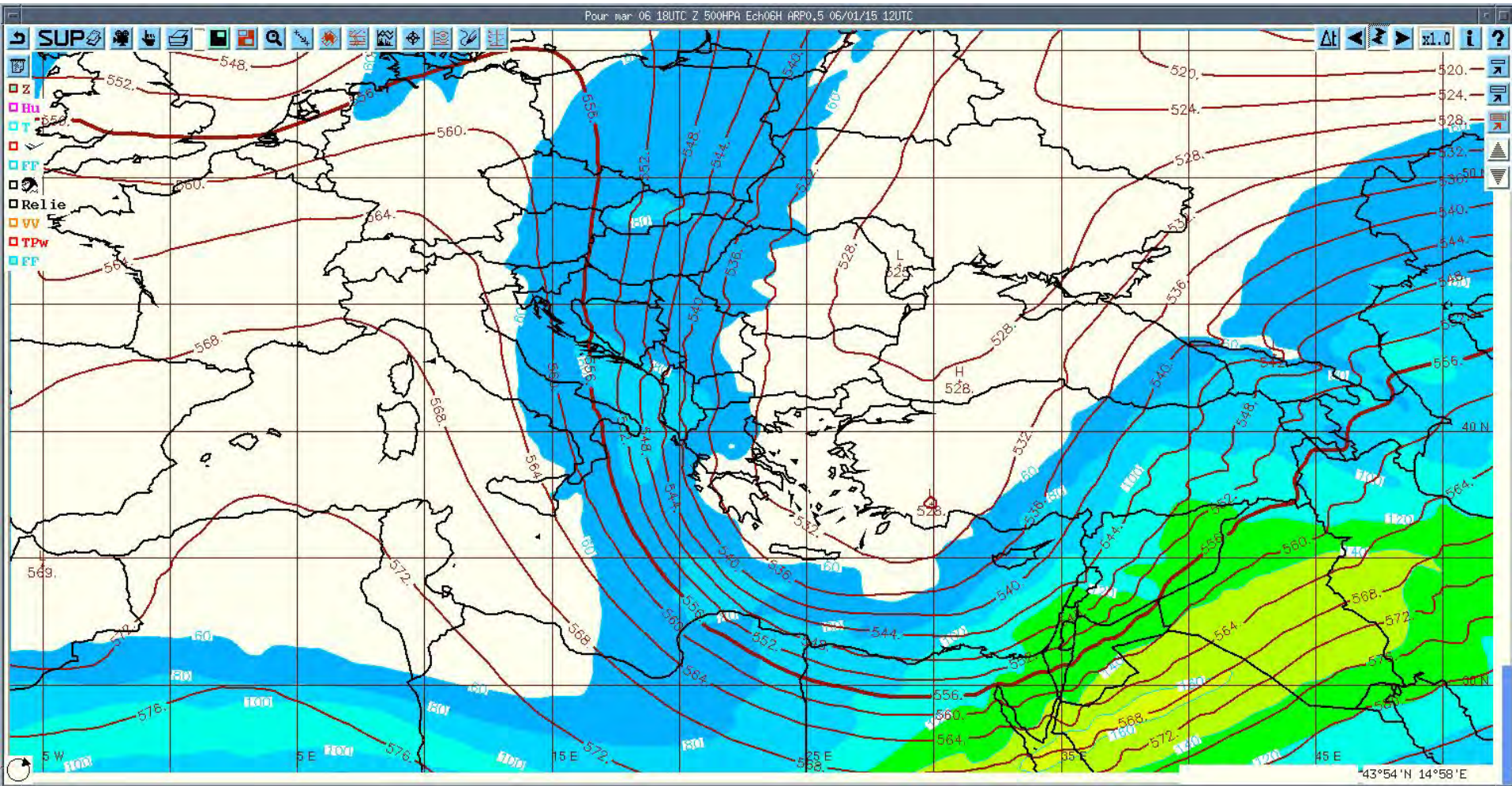


Jet 06/01/2015 12UTC

High speed Sub polar jet passing in south of Lebanon.

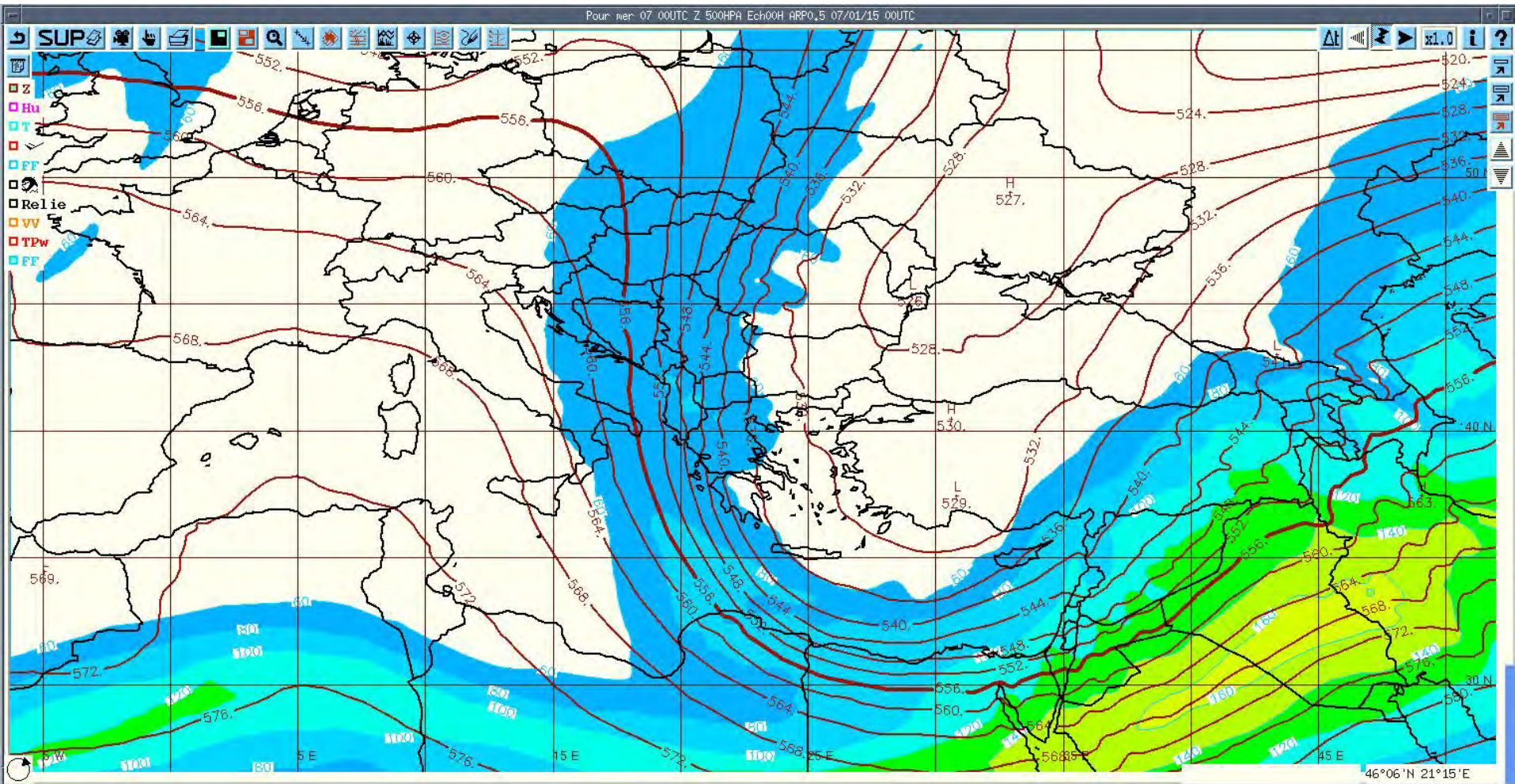


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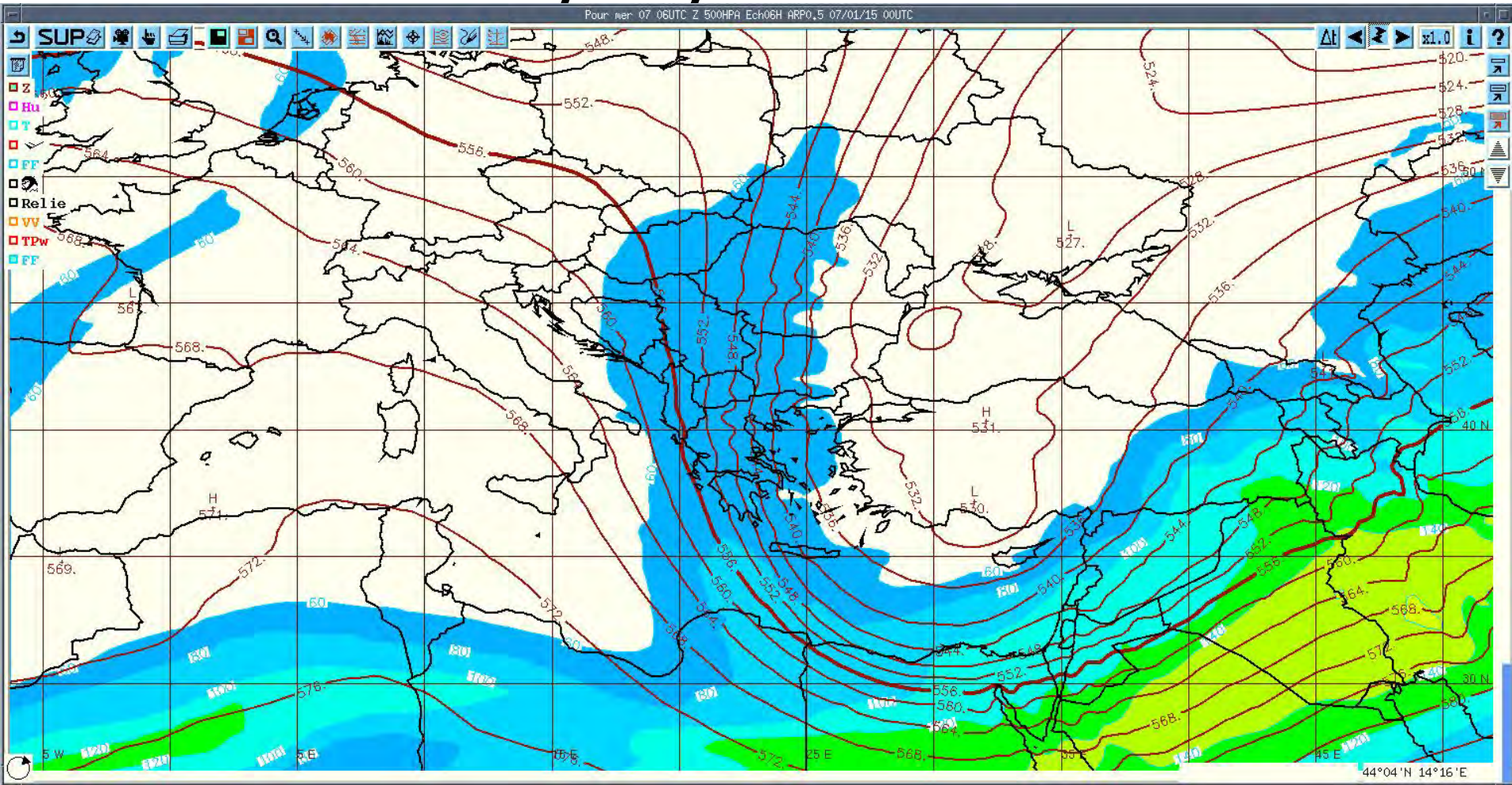


Jet 07/01/2015 00UTC

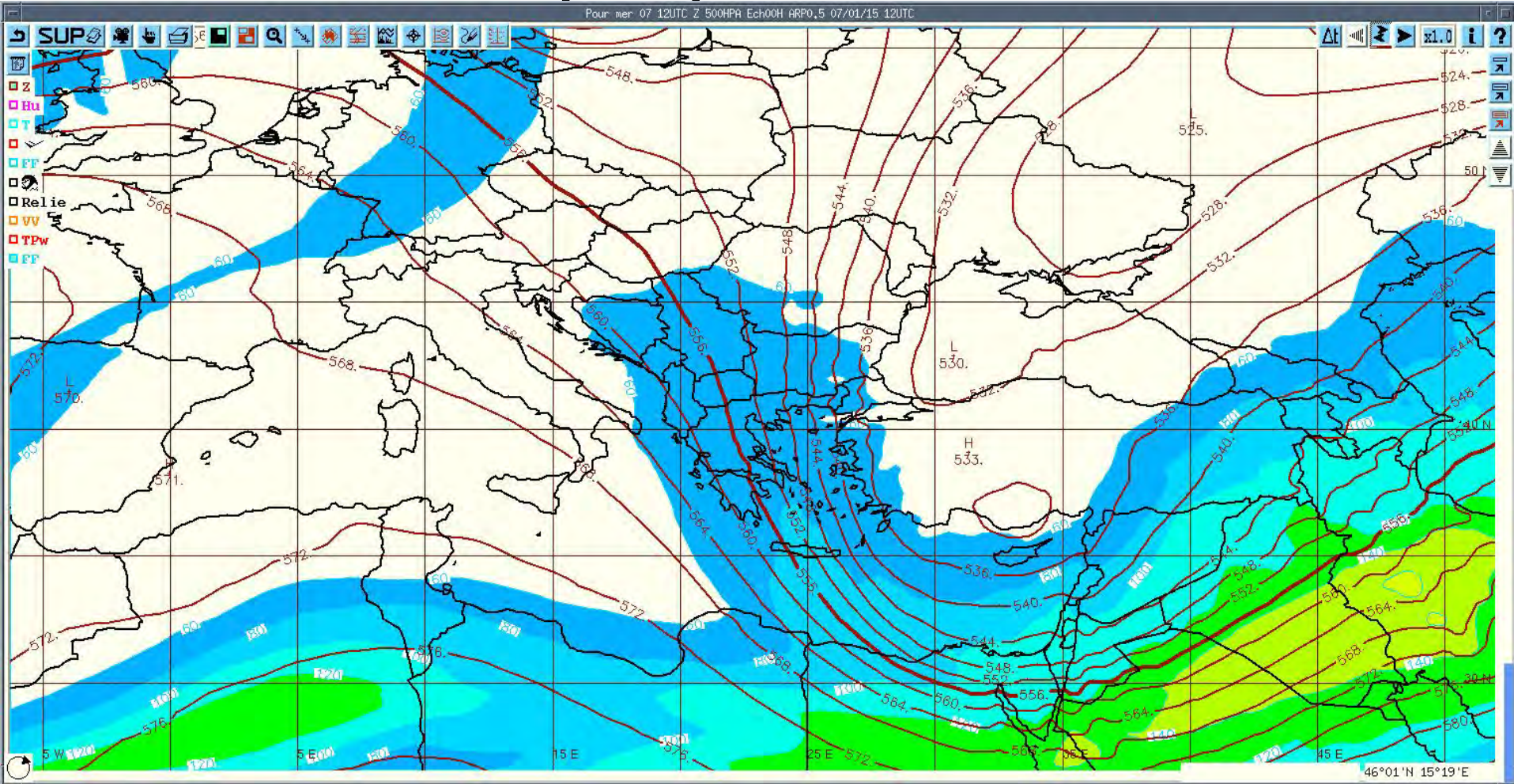
Frontal depression moving east and the jet stream is moving south



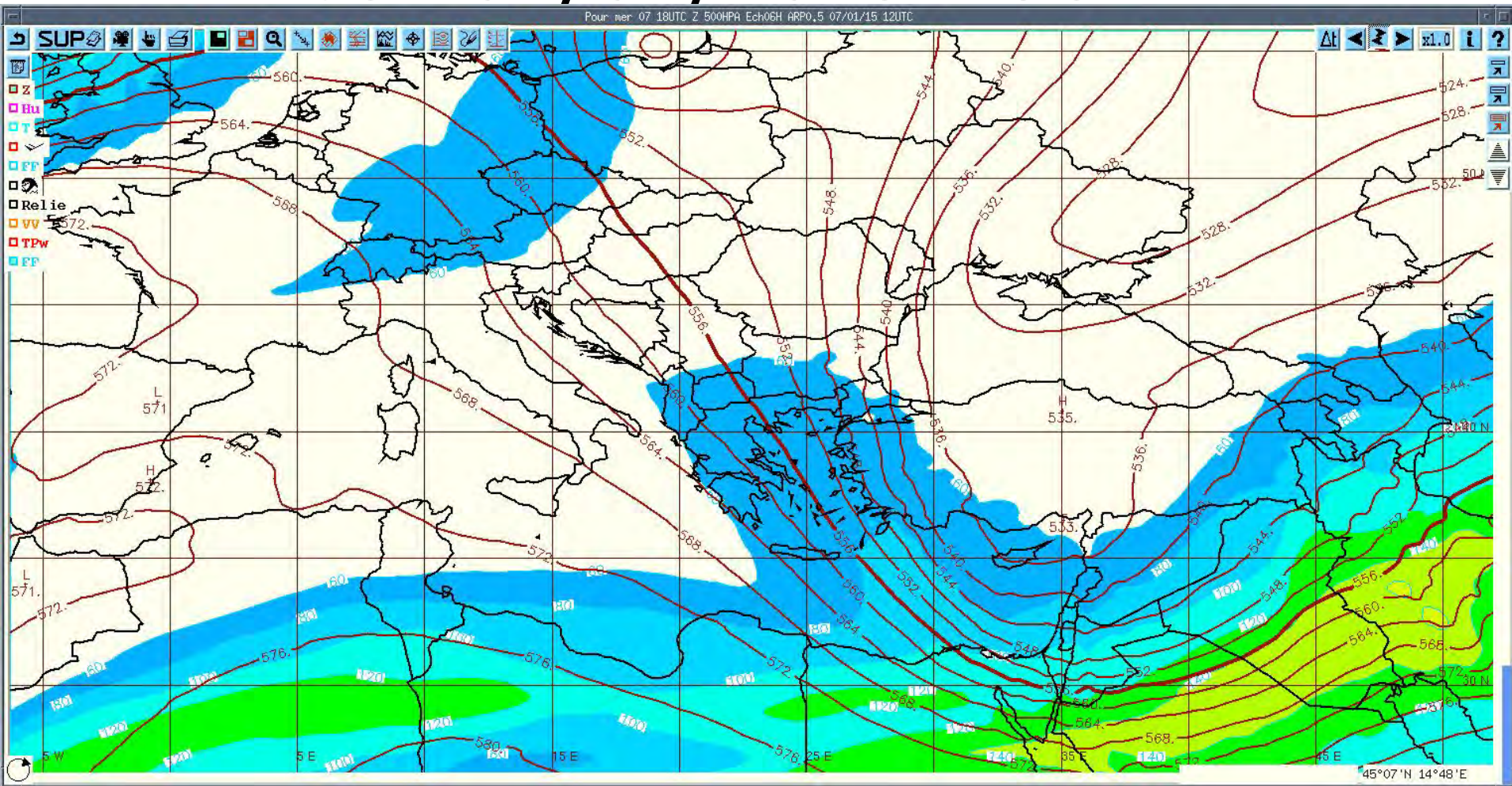
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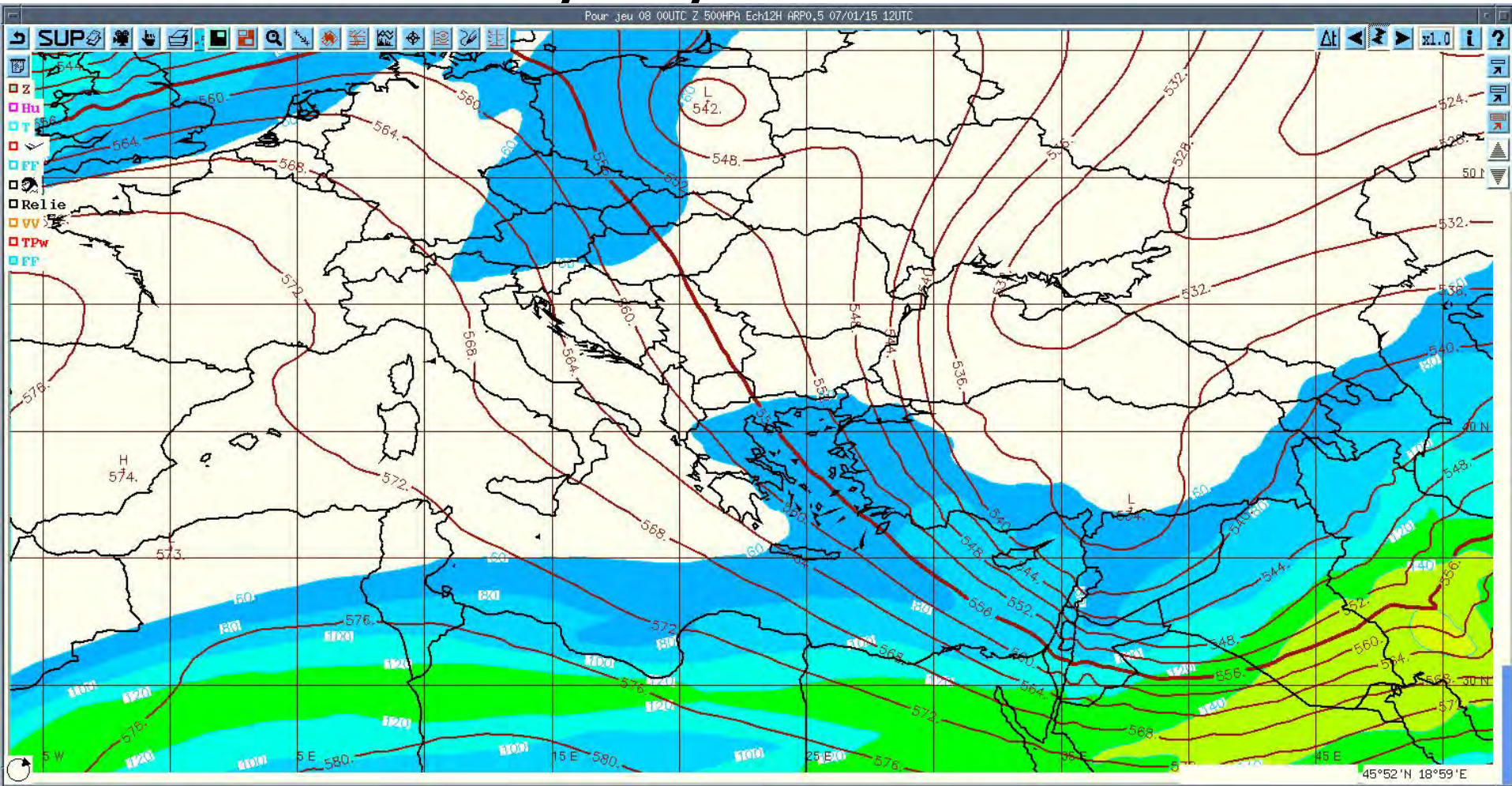
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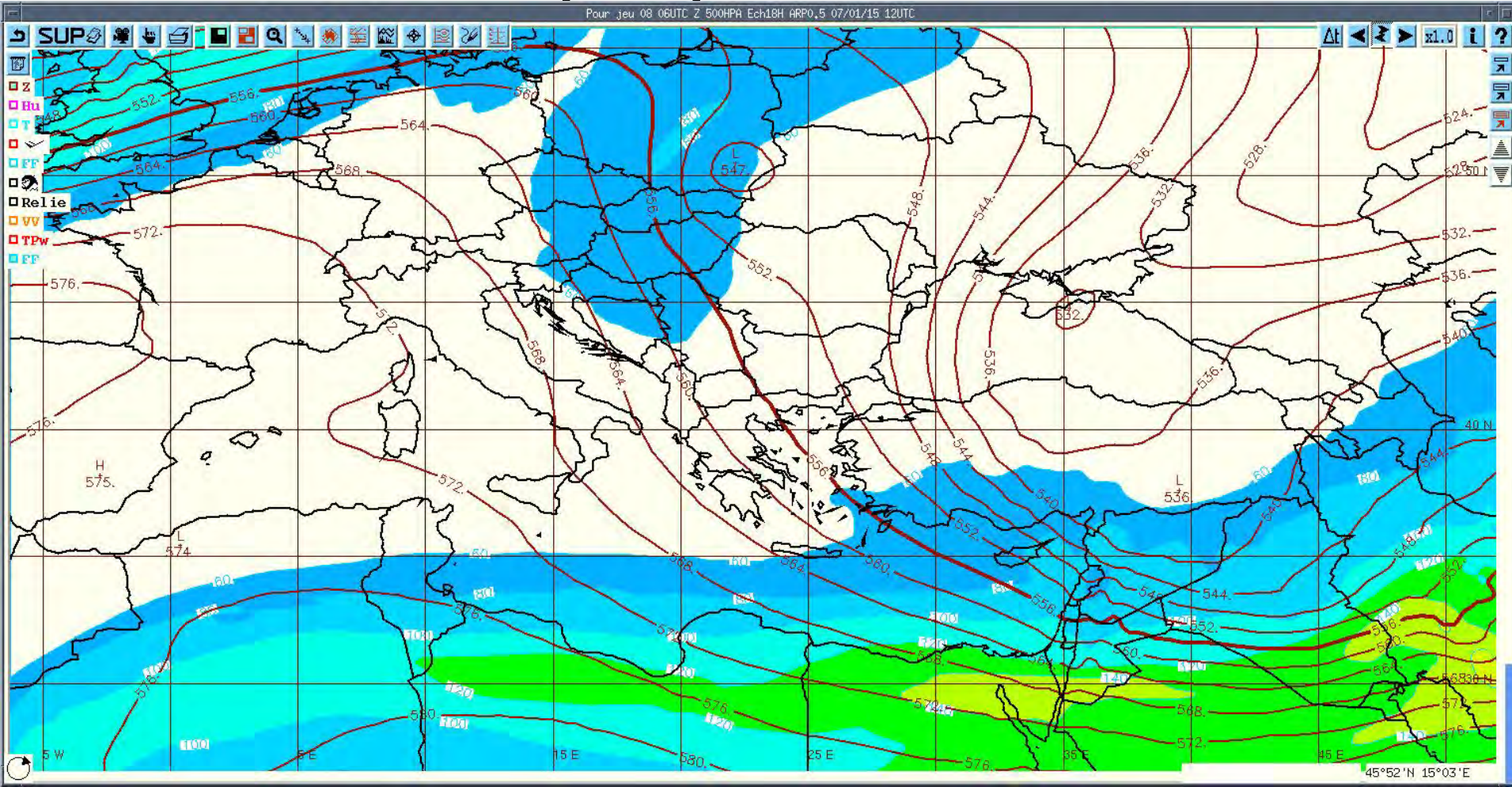
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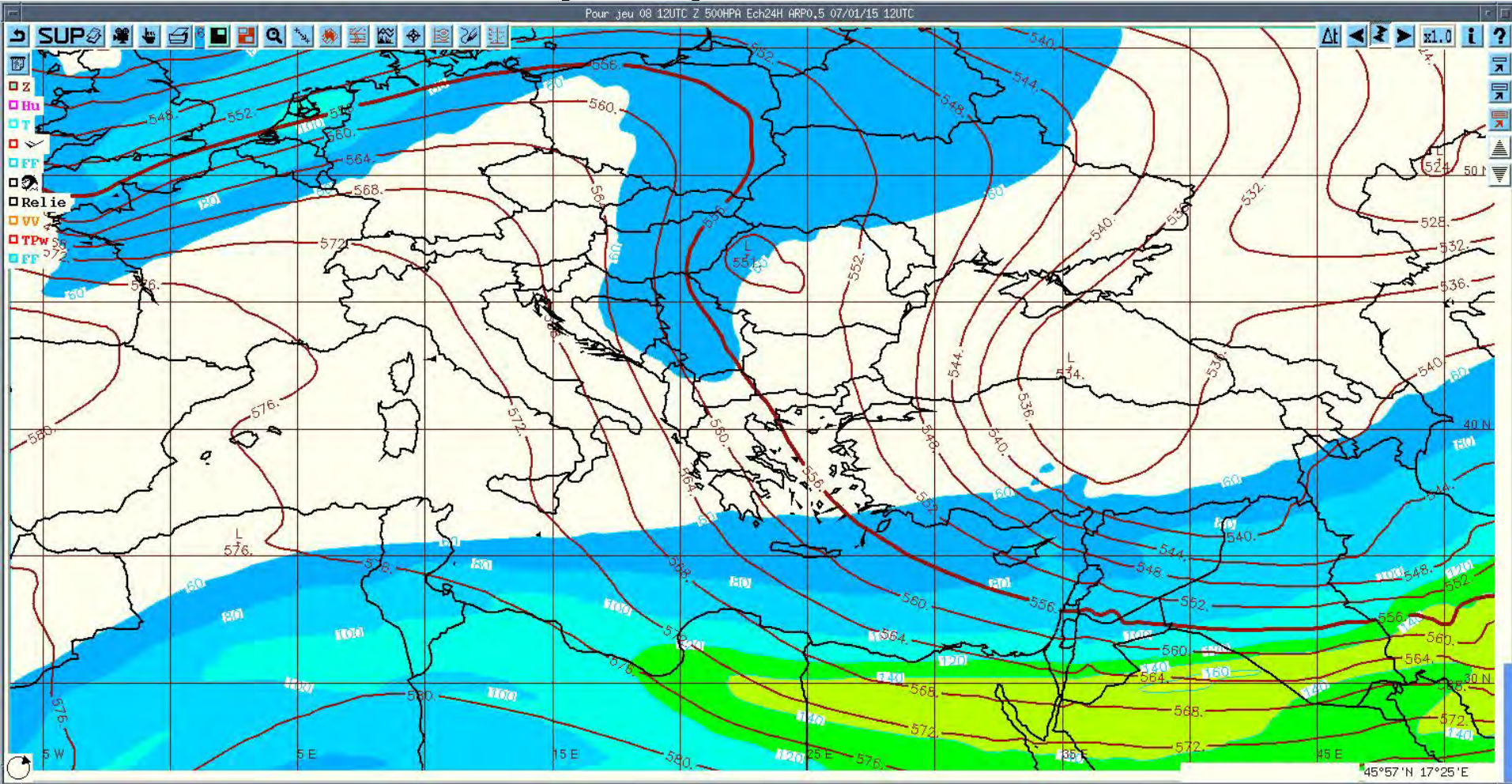
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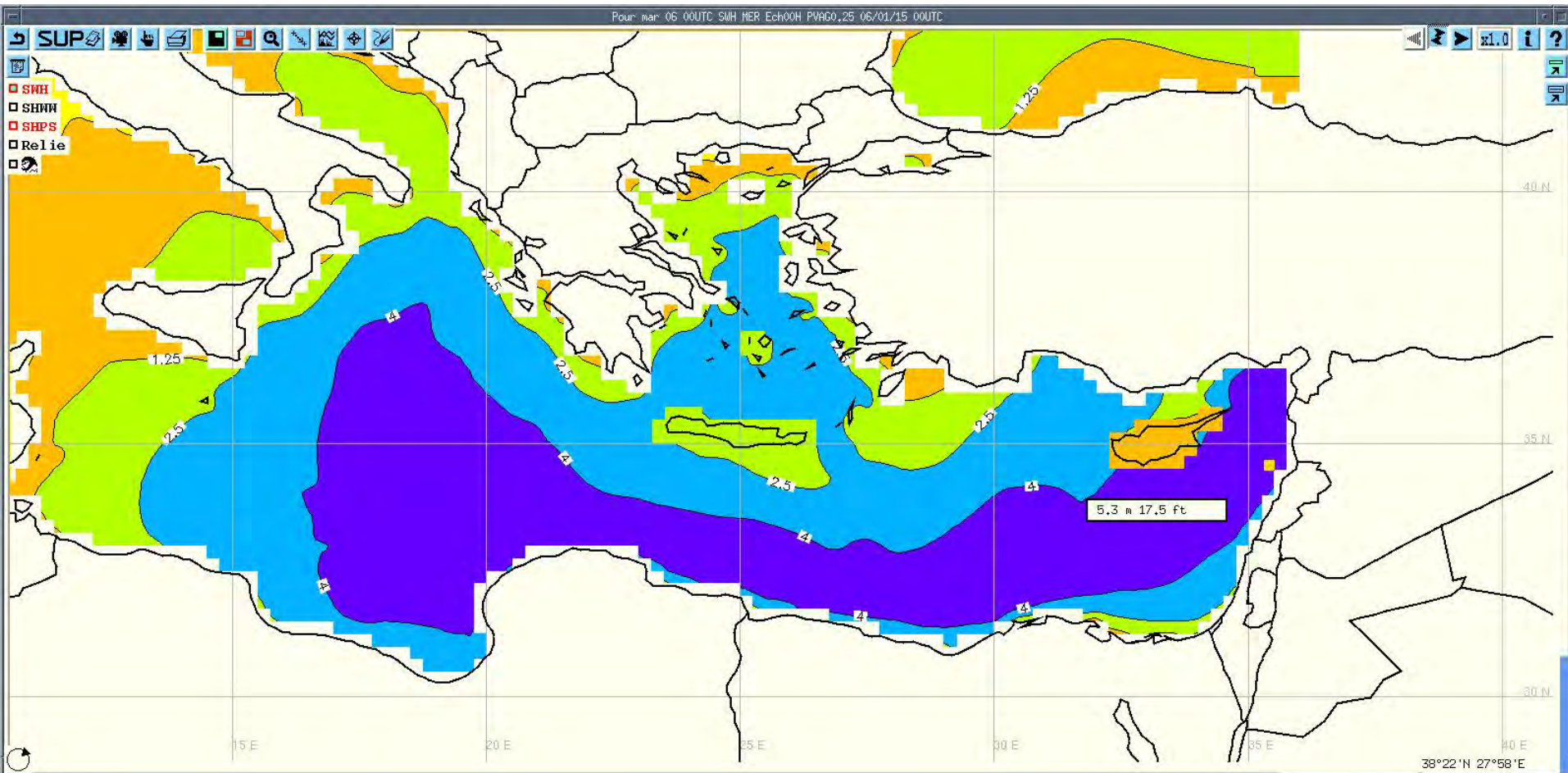
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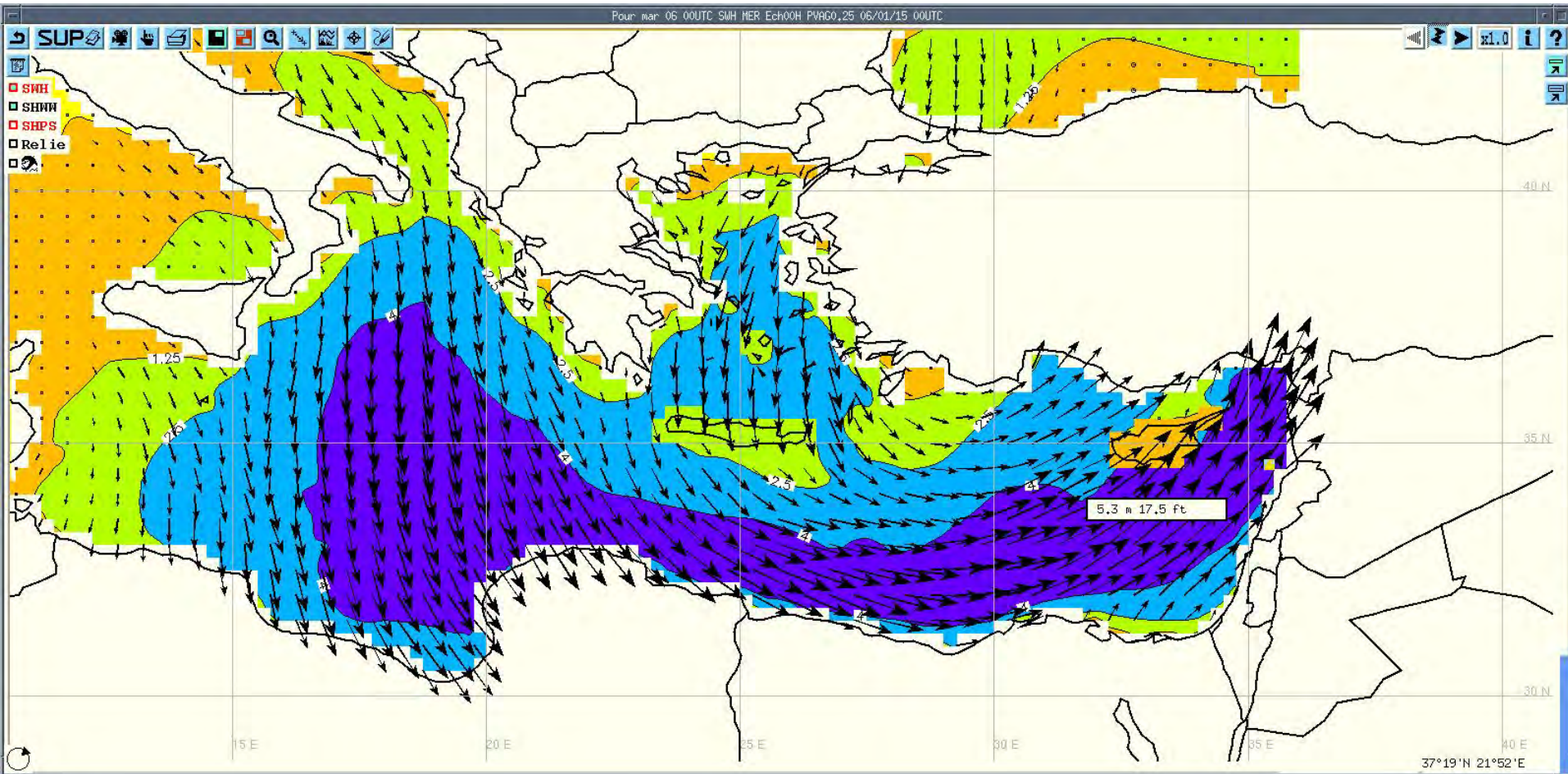
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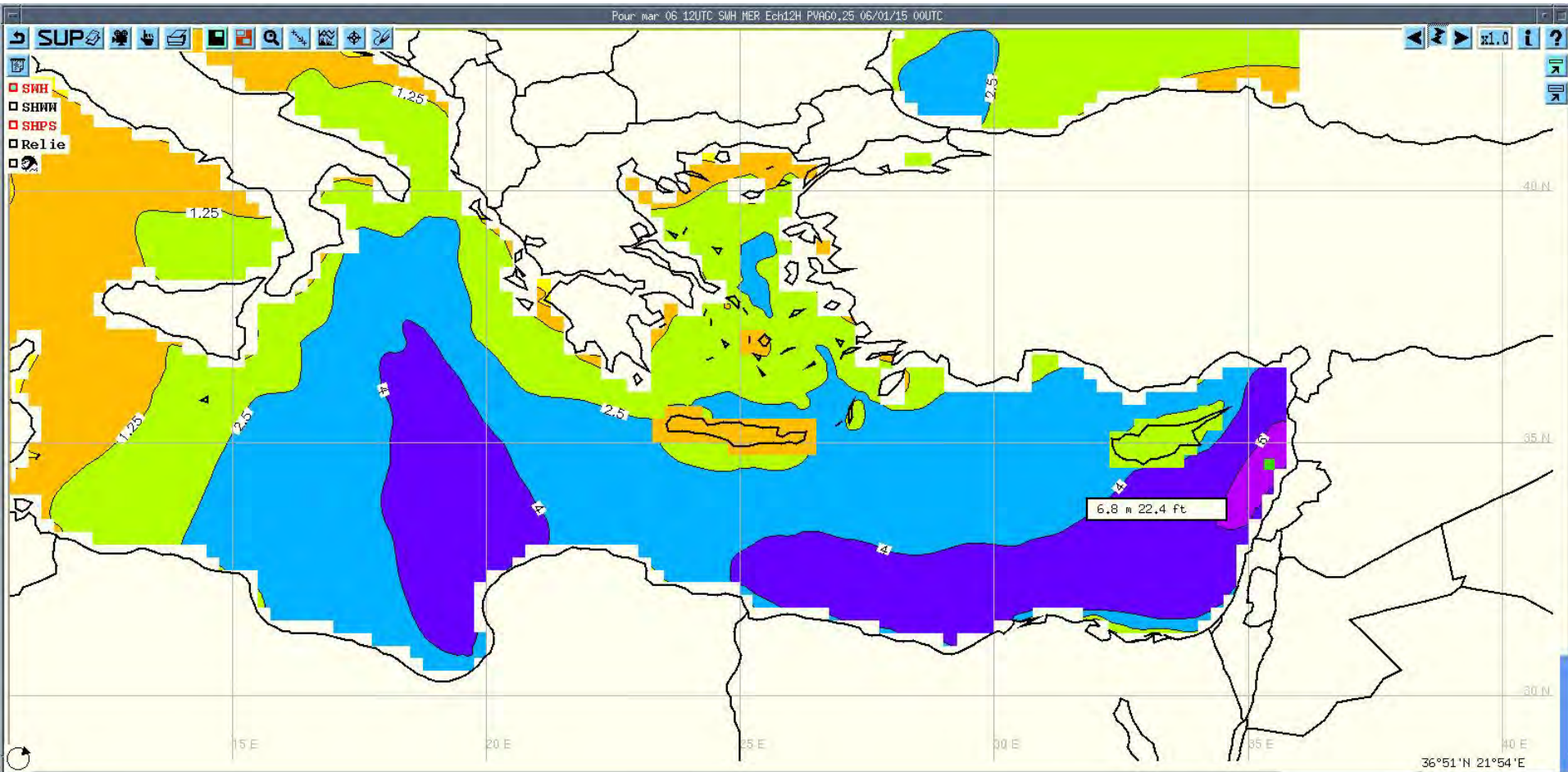
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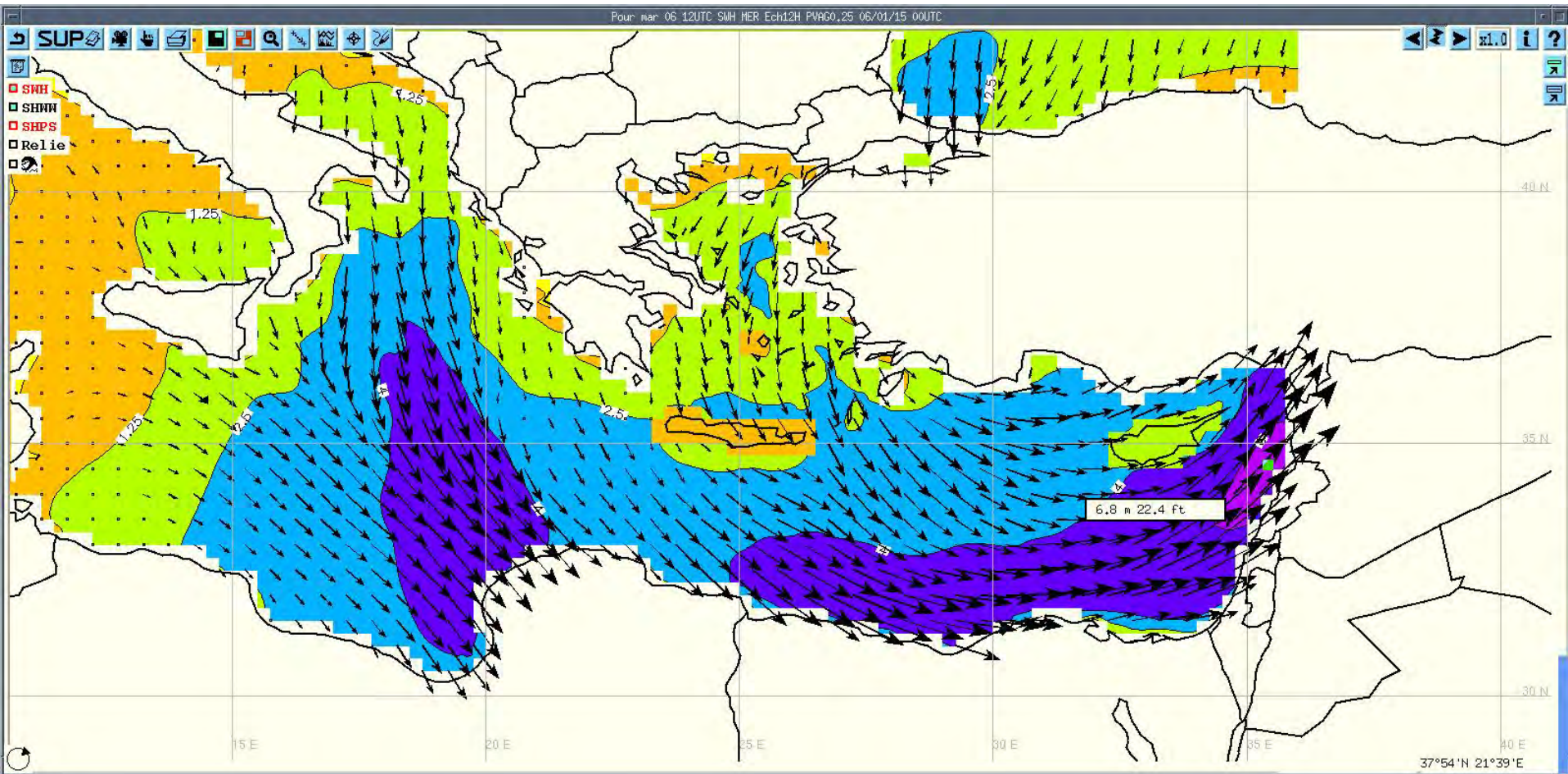
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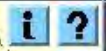


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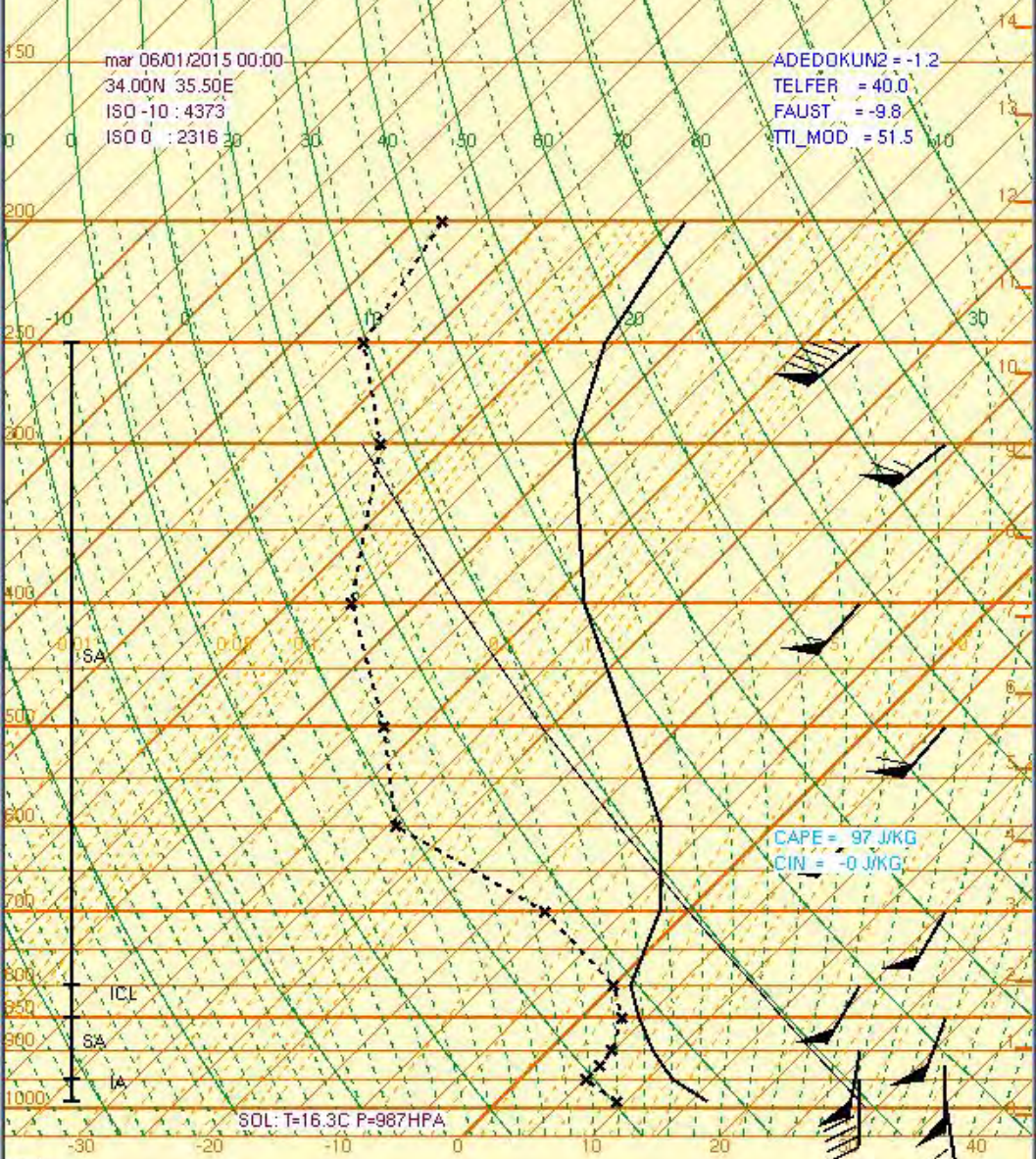
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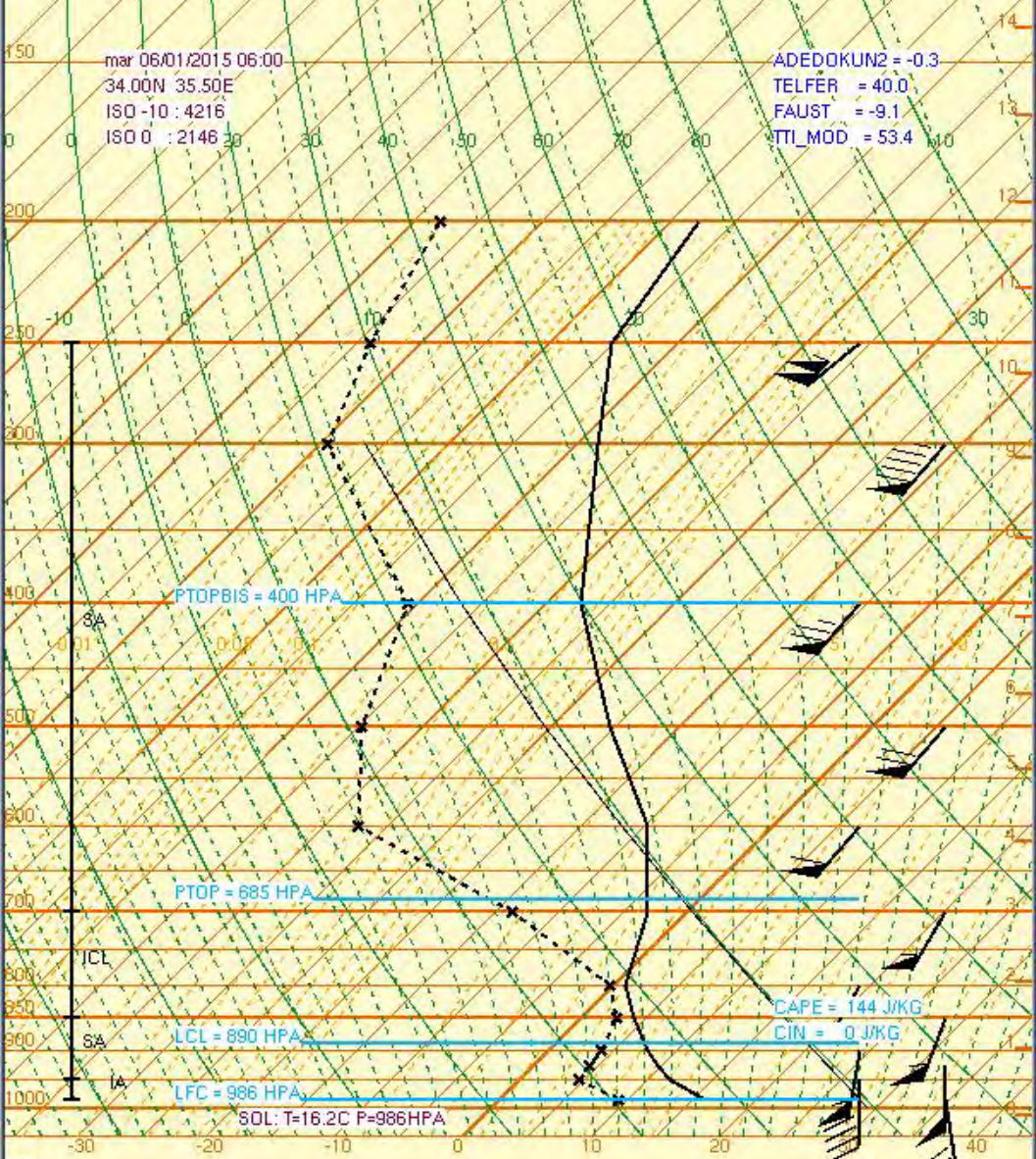
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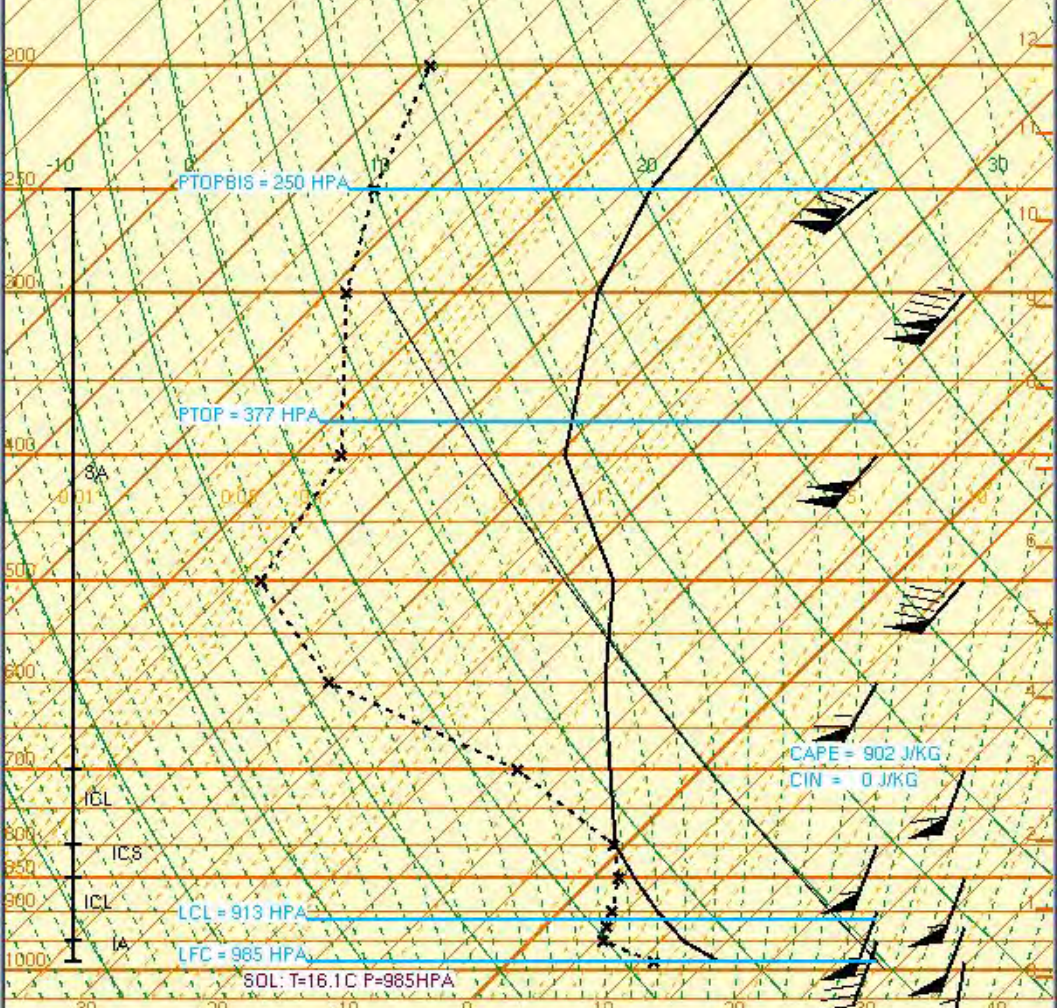


- Diagn
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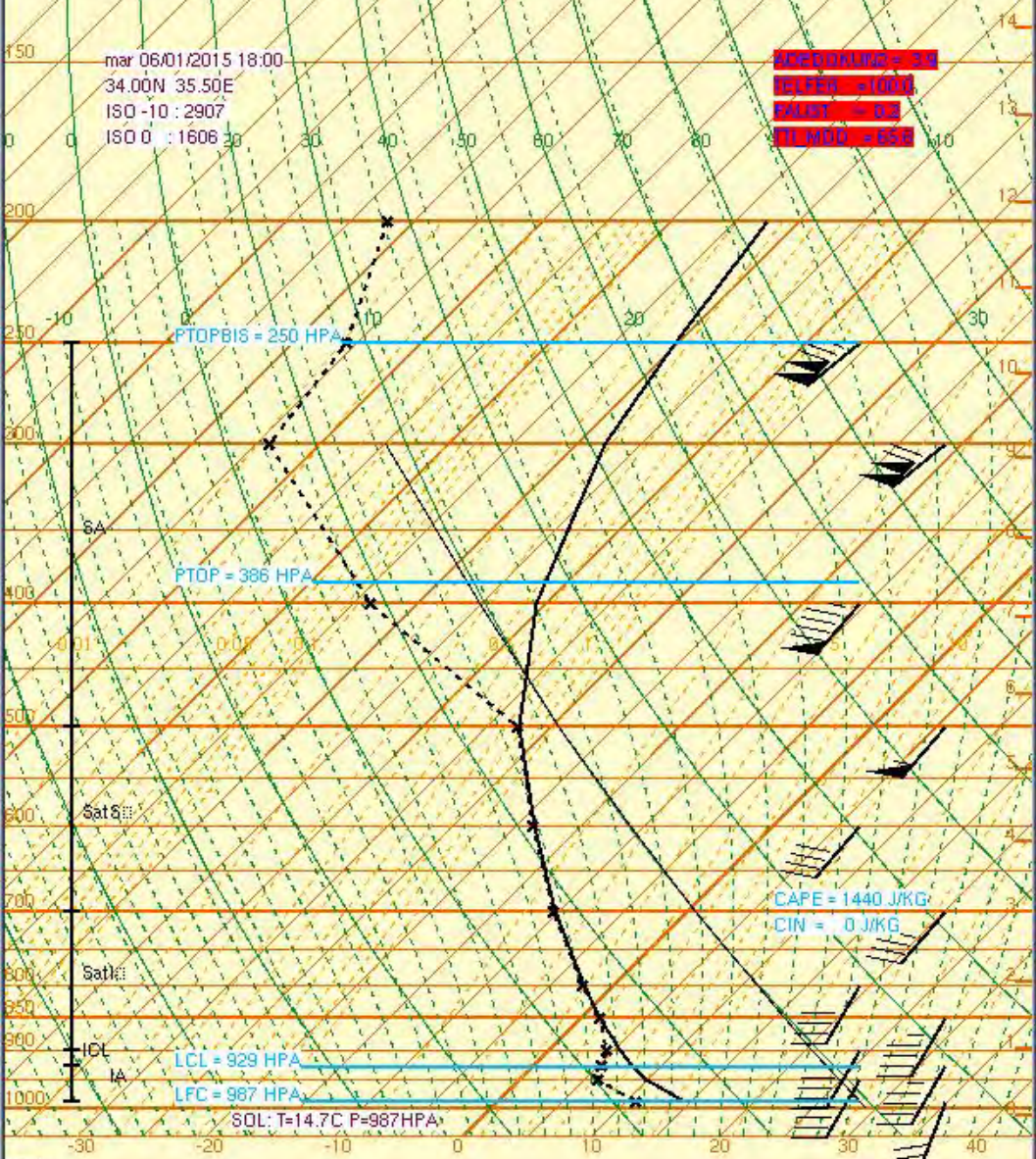
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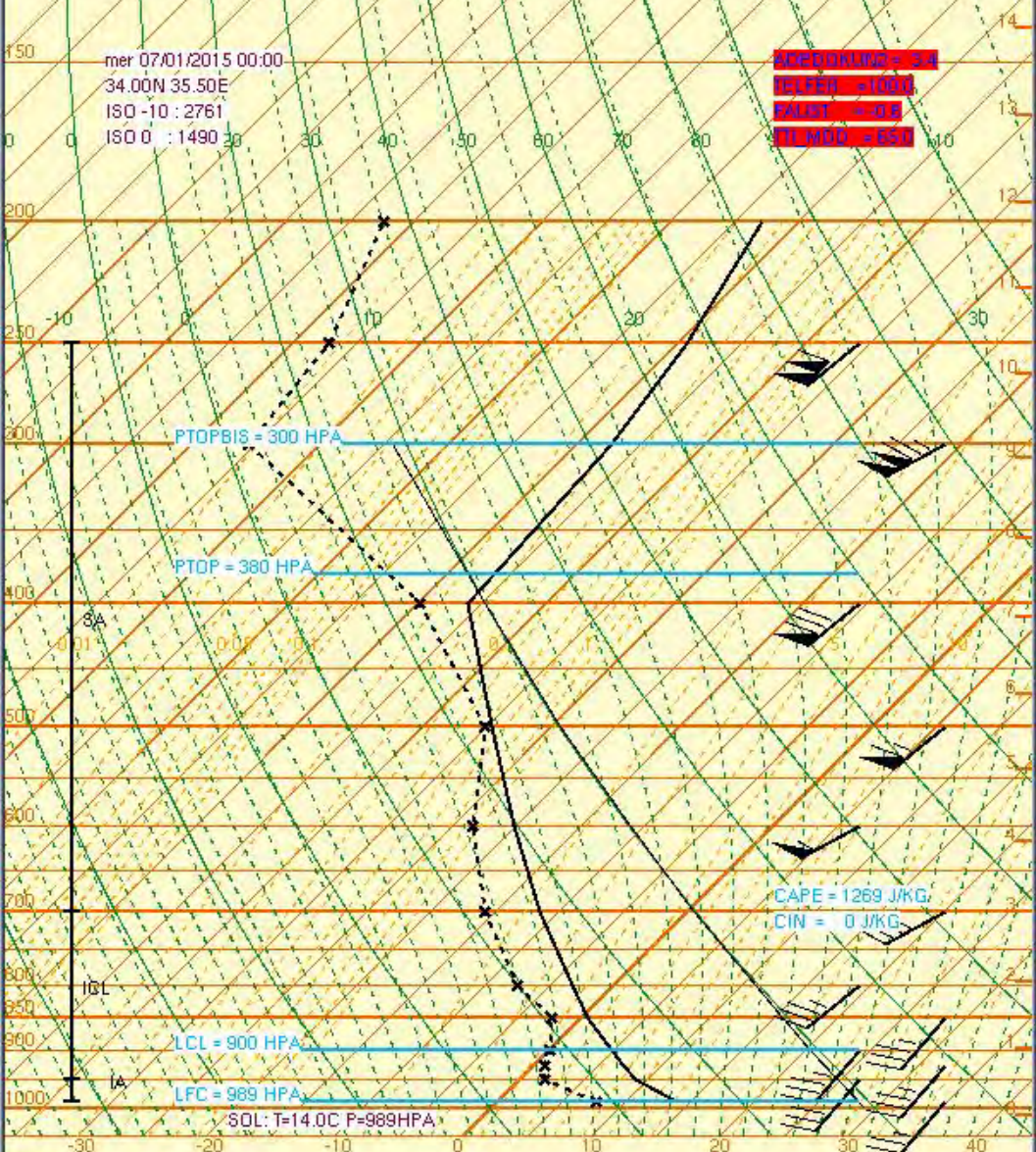
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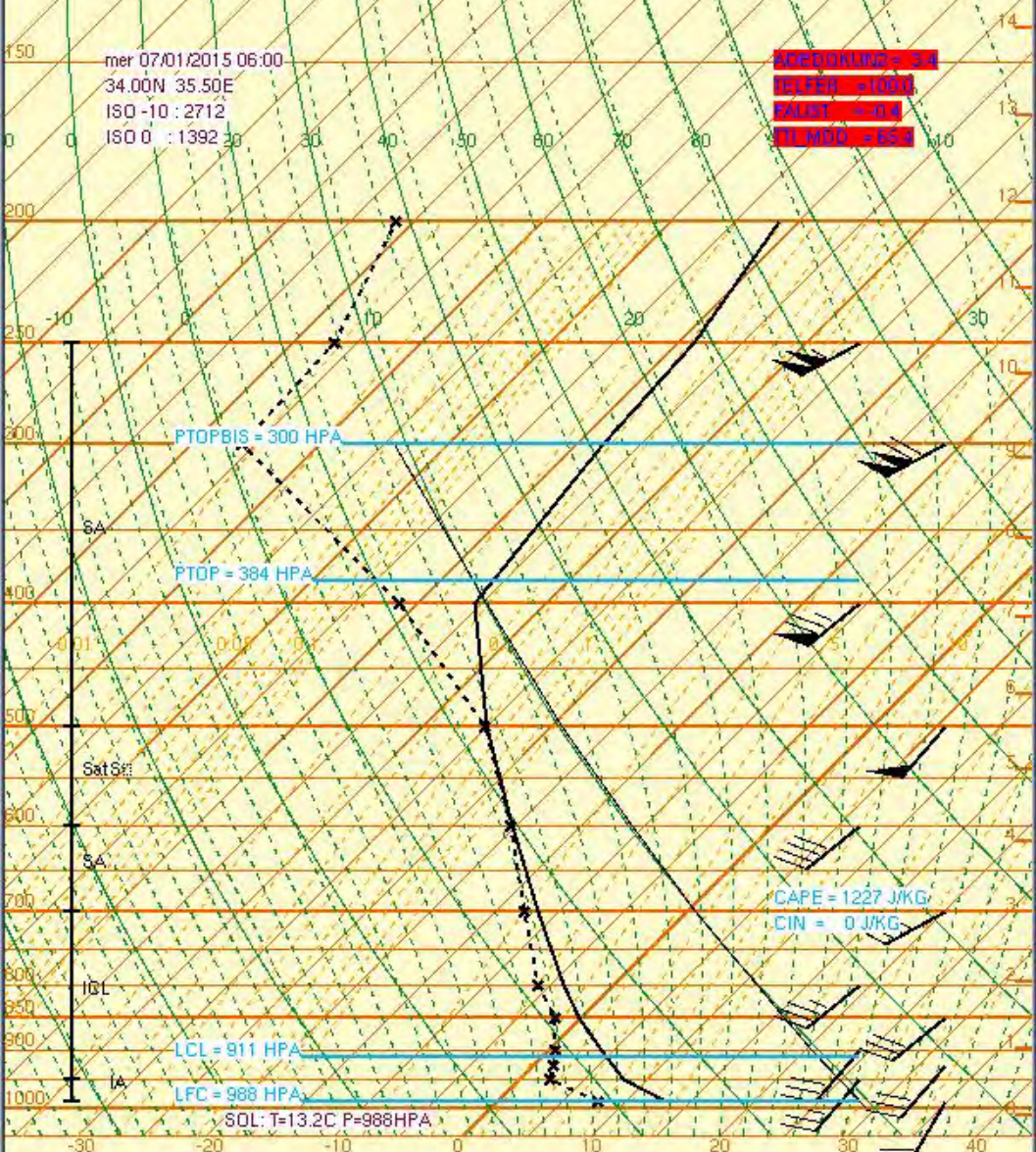
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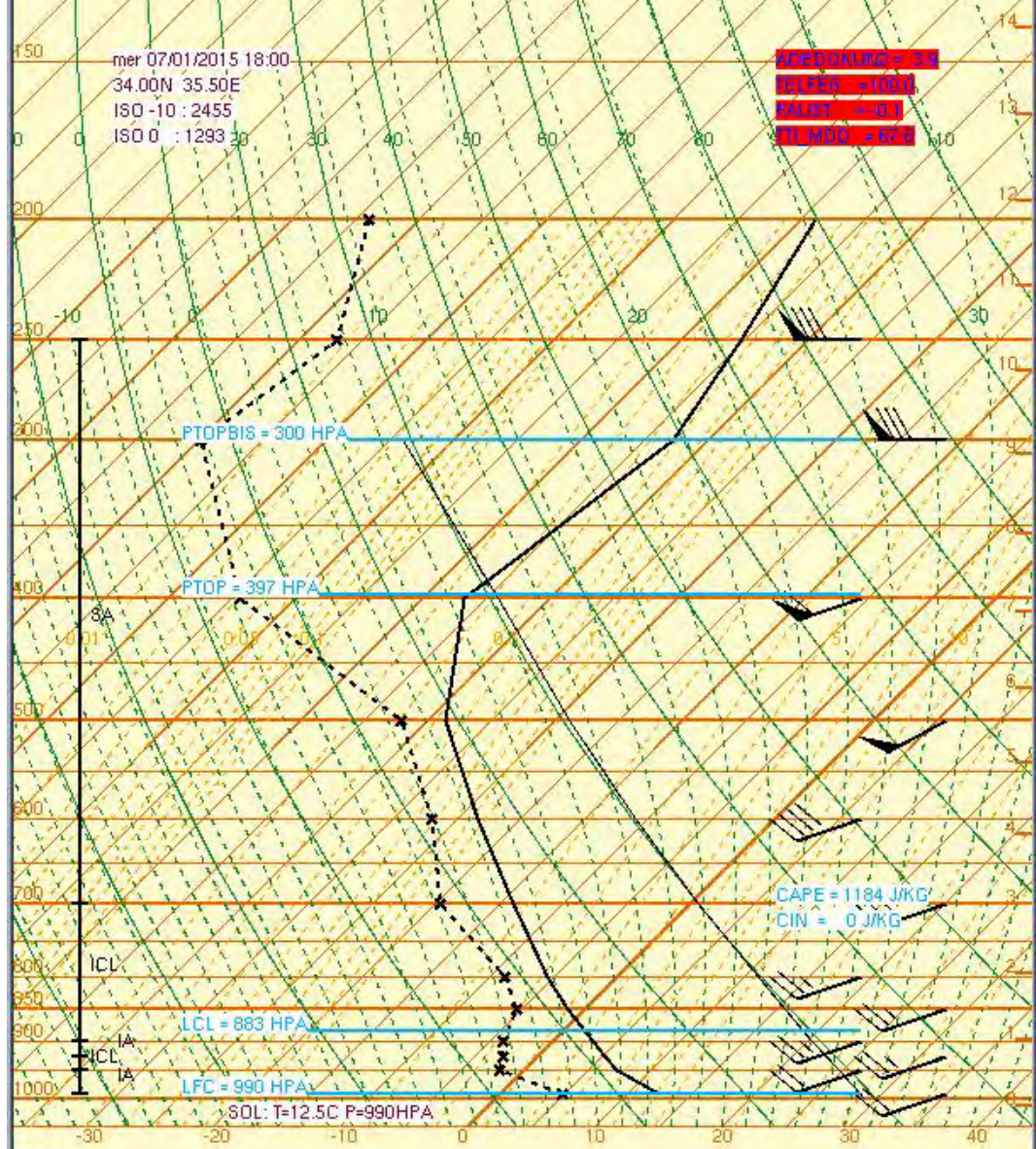
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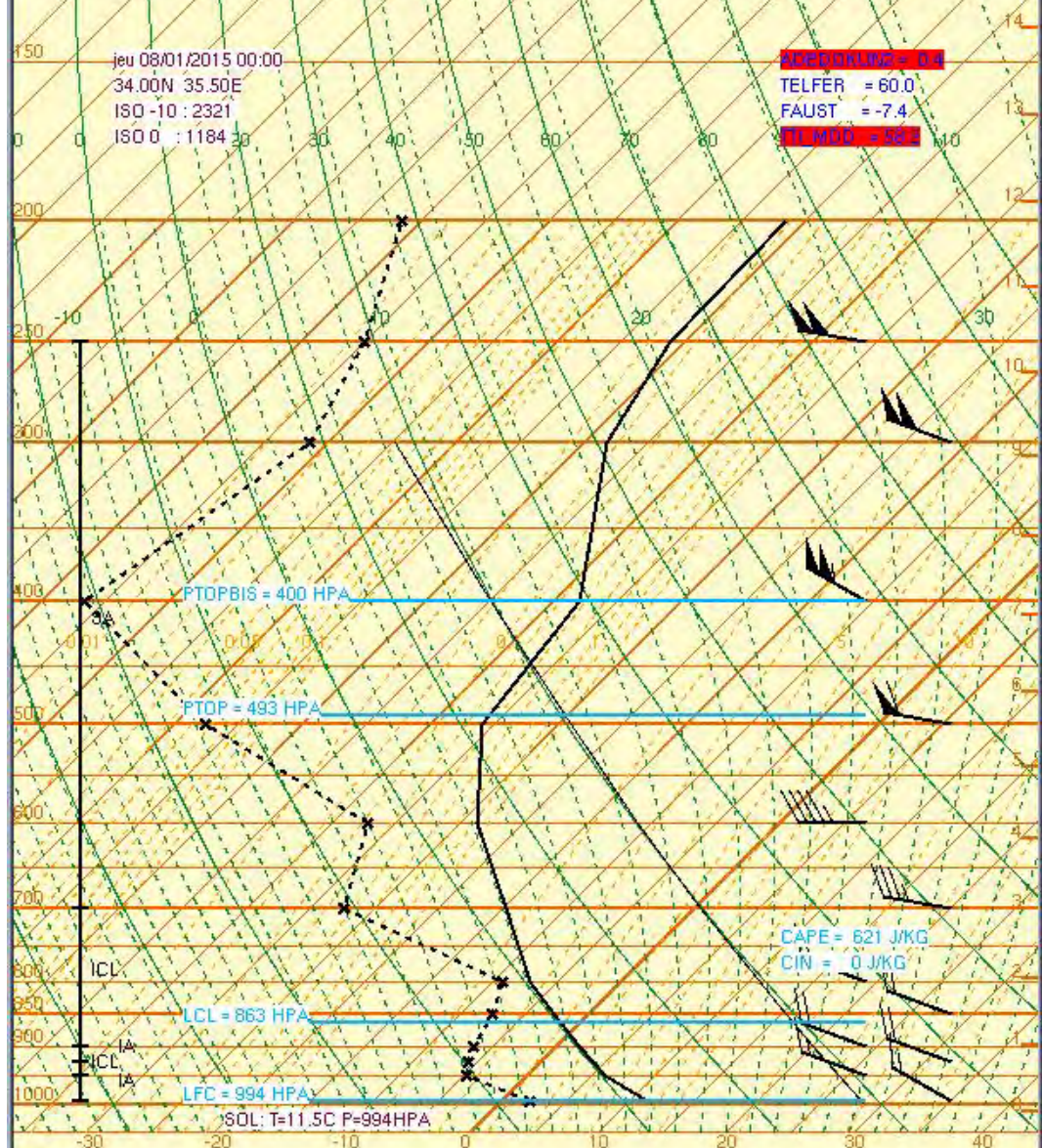
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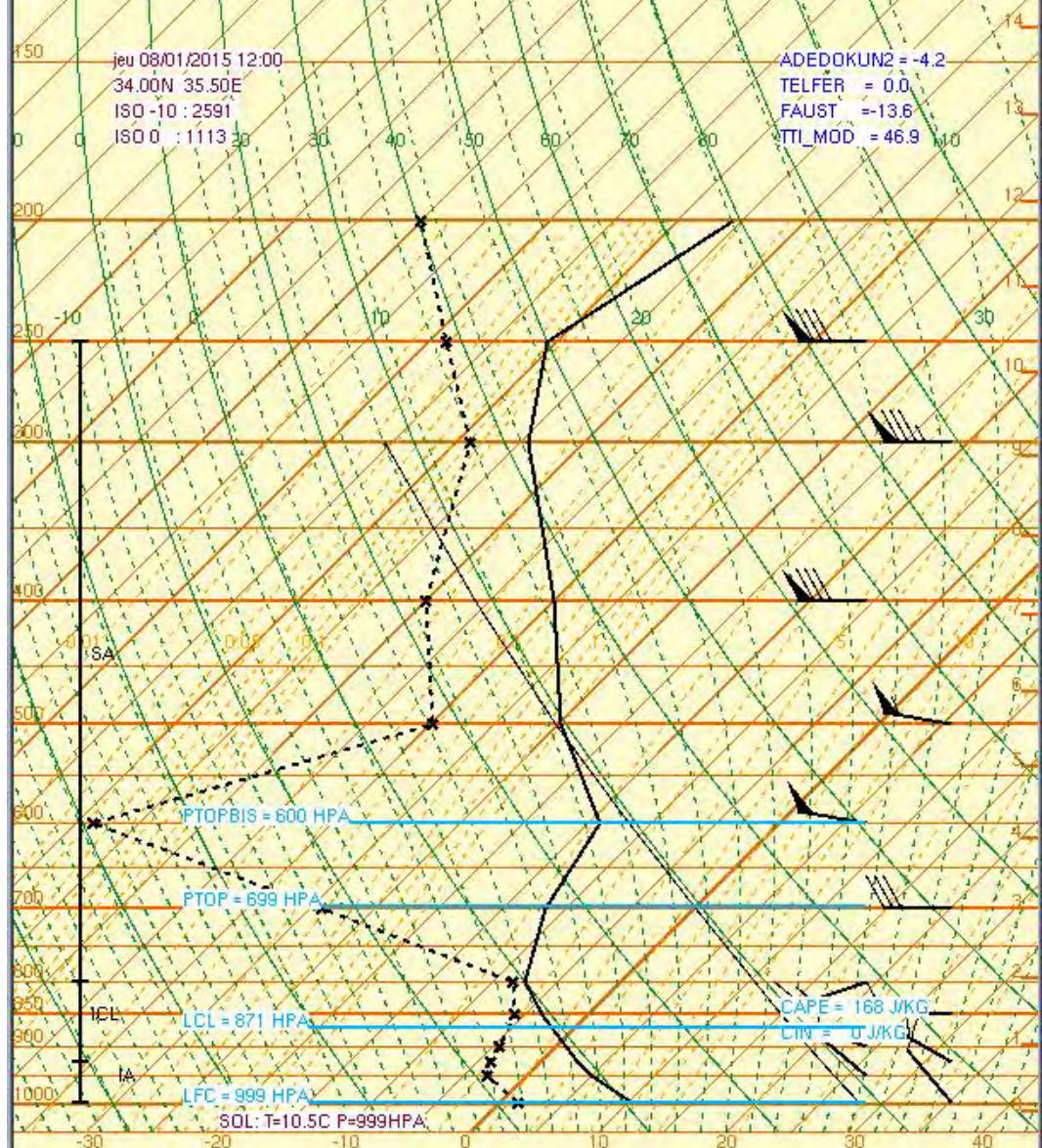
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Gauge Station 40115

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6	1	2015	17	0	3.4
6	1	2015	18	0	3.4
6	1	2015	19	0	4
6	1	2015	20	0	5.5
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6	1	2015	23	0	2.2
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7	1	2015	2	0	0.4
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- Deadly Flash Flood Yesterday in West Virginia
7" of rain falling in 3 hours
- 23 Dead in Devastating West Virginia Flooding



A satellite image of Earth showing a large, swirling storm system over the Atlantic Ocean. The storm has a distinct eye and is surrounded by dense, white clouds. The surrounding landmasses are visible in shades of green, brown, and red, with the ocean appearing dark blue. The text "Flash Flood Warning Issuance and Dissemination" is overlaid in red on the image.

Flash Flood Warning Issuance and Dissemination

- FLASH FLOOD WARNING
- BULLETIN - EAS ACTIVATION REQUESTED FLASH FLOOD WARNING NATIONAL WEATHER SERVICE BALTIMORE MD/WASHINGTON DC 1050 PM EDT TUE JUN 28 2016
- THE NATIONAL WEATHER SERVICE IN STERLING VIRGINIA HAS ISSUED A
 - * FLASH FLOOD WARNING FOR... SOUTHWESTERN STAFFORD COUNTY IN NORTHERN VIRGINIA... THE CITY OF FREDERICKSBURG IN CENTRAL VIRGINIA...

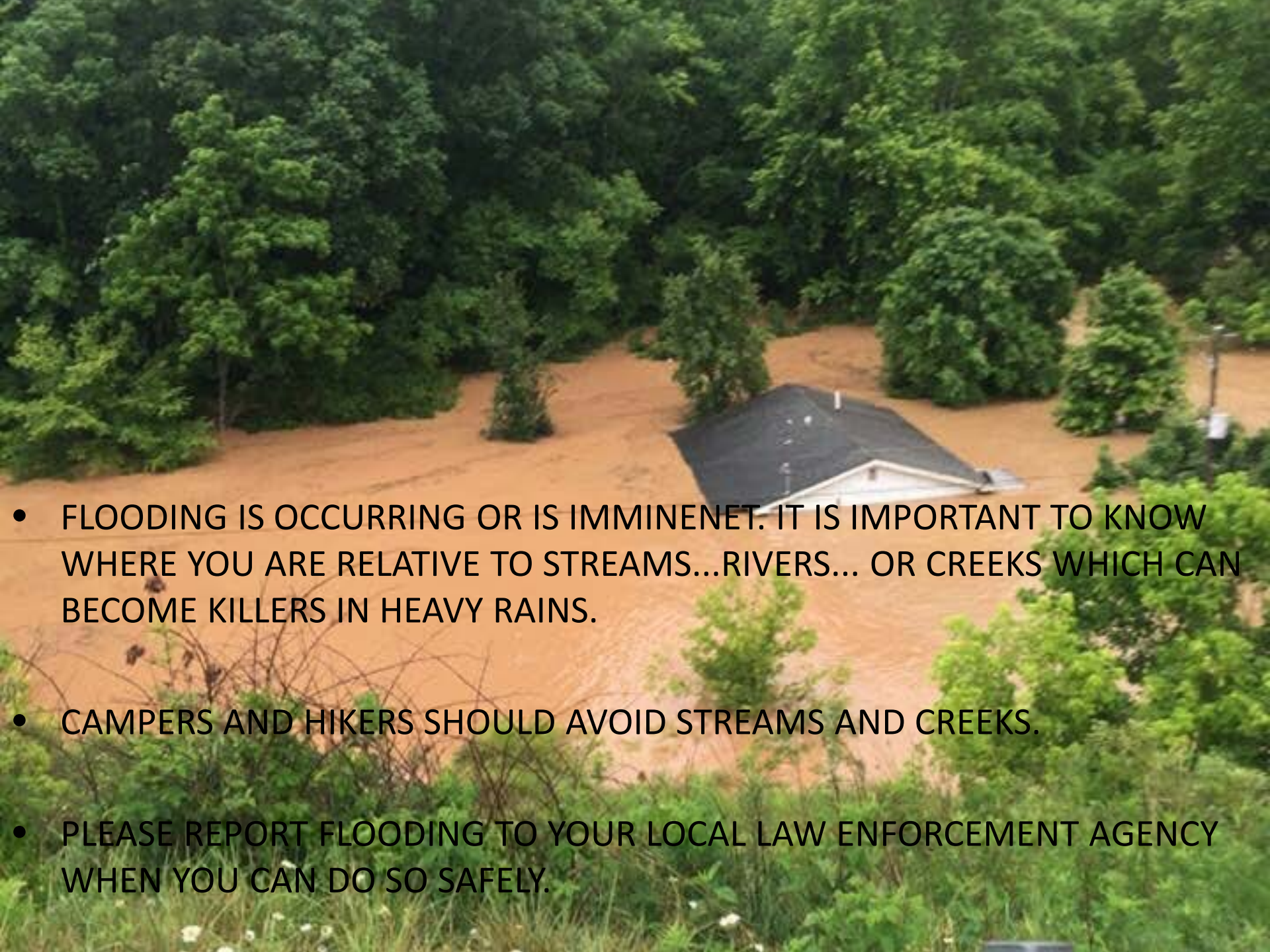
UNTIL 14:05 AM EDT

AT 1050 PM EDT...DOPPLER RADAR INDICATED THUNDERSTORMS PRODUCING HEAVY RAIN ACROSS THE AREA. UP TO TWO INCHES OF RAIN HAVE ALREADY FALLEN. ADDITIONAL RAINFALL AMOUNTS OF ONE TO TWO INCHES ARE POSSIBLE. FLASH FLOODING IS EXPECTED TO BEGIN SHORTLY.

SOME LOCATIONS THAT ARE EXPECTED TO EXPERIENCE FLOODING INCLUDE...
STONES CORNER..SPRING VALLEY...HOLLY CORNER...

***PRECAUTIONARY/PREPAREDNESS ACTIONS...

- MOVE TO HIGHER GROUND NOW. ACT QUICKLY TO PROTECT YOUR LIFE.
- TURN AROUND...DON`T DROWN WHEN ENCOUNTERING FLOODED ROADS. MOST FLOOD DEATHS OCCUR IN VEHICLES.
- BE ESPECIALLY CAUTIOUS AT NIGHT WHEN IT IS HARDER TO RECOGNIZE THE DANGERS OF FLOODING.



- FLOODING IS OCCURRING OR IS IMMINENT. IT IS IMPORTANT TO KNOW WHERE YOU ARE RELATIVE TO STREAMS...RIVERS... OR CREEKS WHICH CAN BECOME KILLERS IN HEAVY RAINS.
- CAMPERS AND HIKERS SHOULD AVOID STREAMS AND CREEKS.
- PLEASE REPORT FLOODING TO YOUR LOCAL LAW ENFORCEMENT AGENCY WHEN YOU CAN DO SO SAFELY.

THANK YOU

