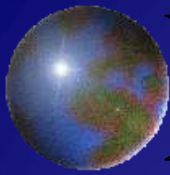
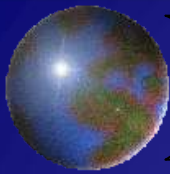


ANTICYCLONES

GEOGRAPHY
GRADE 12

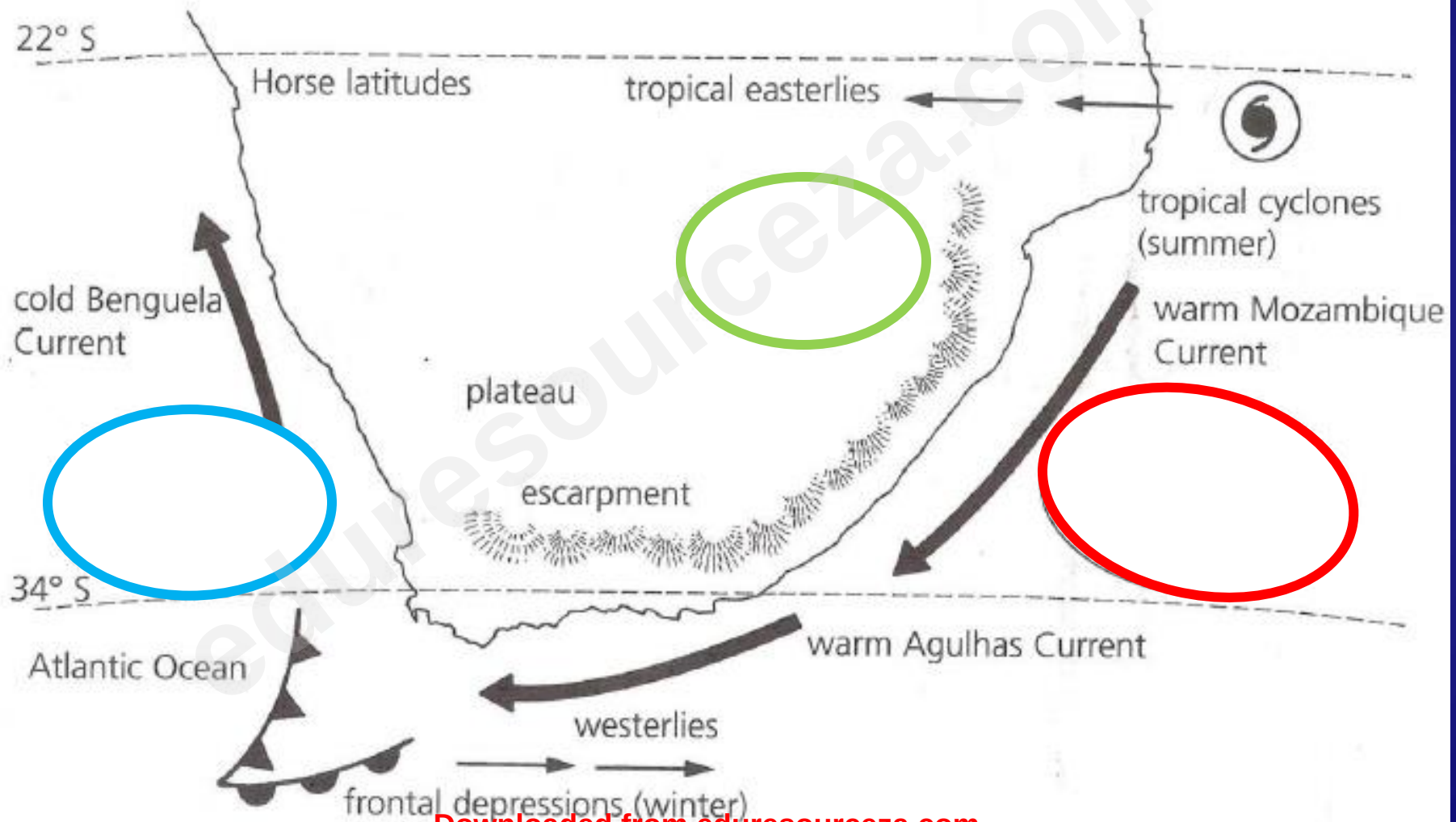


ANTICYCLONES

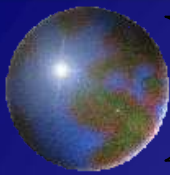


SUBTROPICAL ANTICYCLONES

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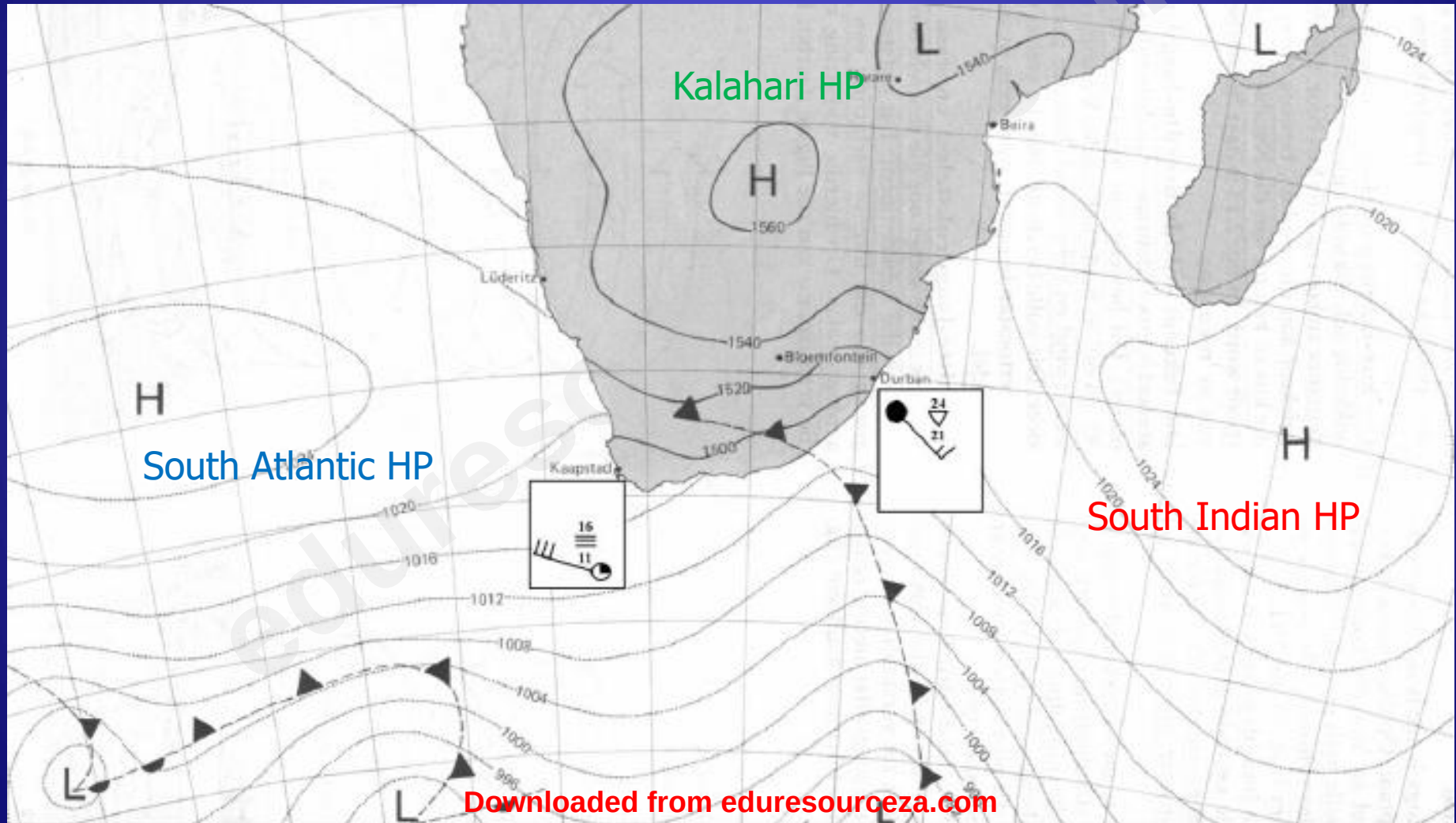


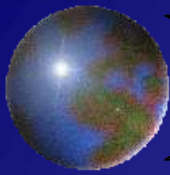
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SUBTROPICAL ANTICYCLONES

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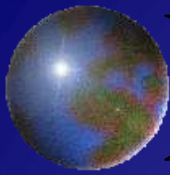


SUBTROPICAL ANTICYCLONES

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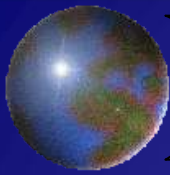
- There are 3 HP systems that affect SA
 - South Indian HP (over the Indian ocean)
 - South Atlantic HP (over the Atlantic ocean)
 - Kalahari HP (over the interior)
- They form part of the subtropical HP belt at 30° N/S
 - Horse Latitudes
- Their positions vary with the seasons
 - They shift N and S with the ITCZ

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GENERAL CHARACTERISTICS

- Associated with subsiding air
 - Air warms adiabatically
 - Cloudless skies with no rain
- Air diverges away from the HP centre
- Rotation is:
 - Anticlockwise – SH
 - Clockwise – NH
- Result in onshore winds

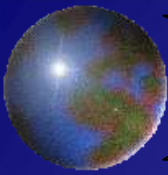


WINTER CONDITIONS

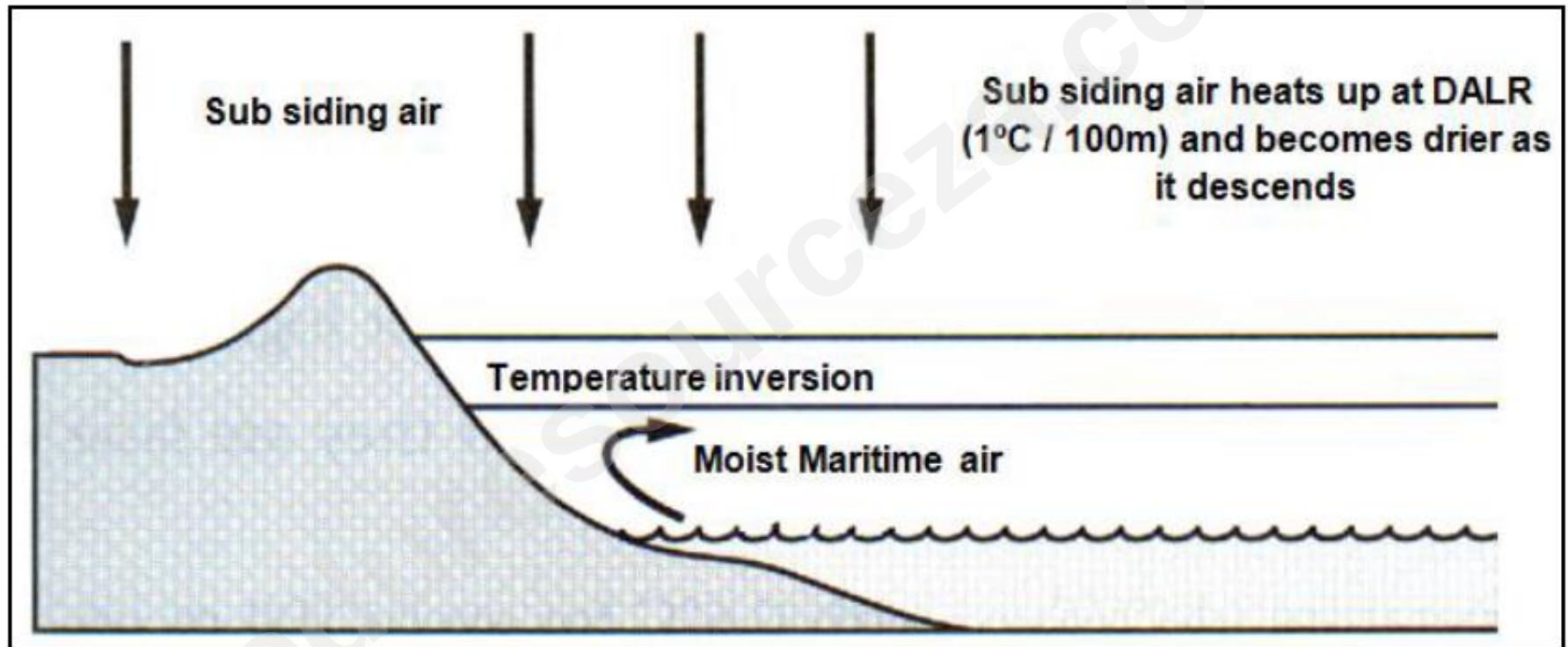
- The subsiding air from the HP heats up adiabatically and is warmer than the air from the coast.
- This causes an inversion layer to form.
- The inversion layer lies below the escarpment.

Cloudless dry conditions:

- Air subsides and is heated adiabatically
- All moisture evaporates
- The plateau is cold:
 - No rising convection currents to lift the HP
 - The inversion layer lies below the escarpment
 - Moist air from the ocean cannot reach the plateau



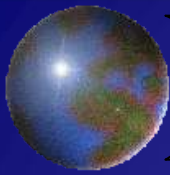
WINTER CONDITIONS



➤ Frost in common :

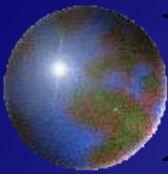
➤ Long cloudless nights = increased terrestrial radiation

➤ Calm conditions = no mixing of warm and cold air

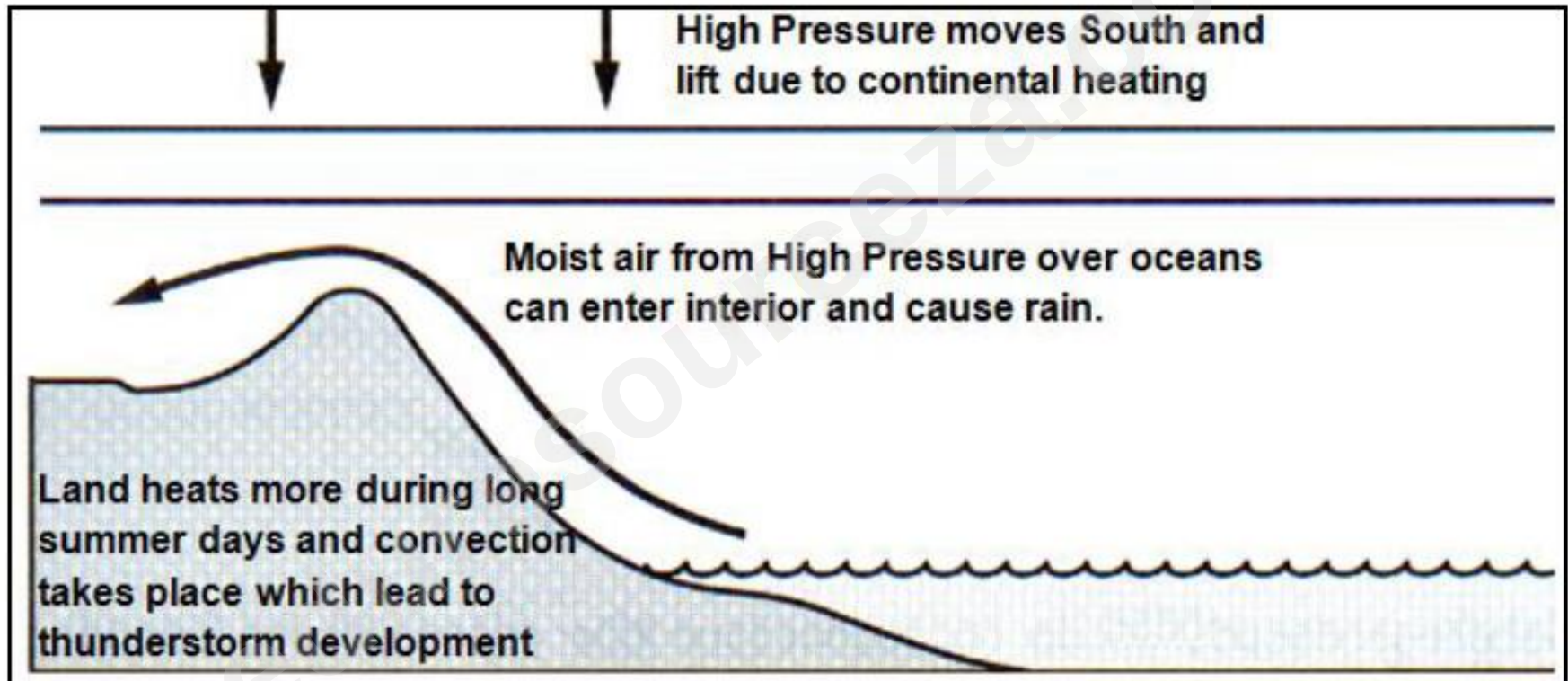


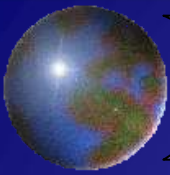
SUMMER CONDITIONS

- The air from the coast is warmer than the subsiding air from the Kalahari HP.
- This causes an inversion layer to form.
- The inversion layer lies above the escarpment.
- Summer rain over the interior
 - Warm moist air from the coast reaches the interior
 - Northeasterly and south easterly winds converge forming line thunderstorms



SUMMER CONDITIONS

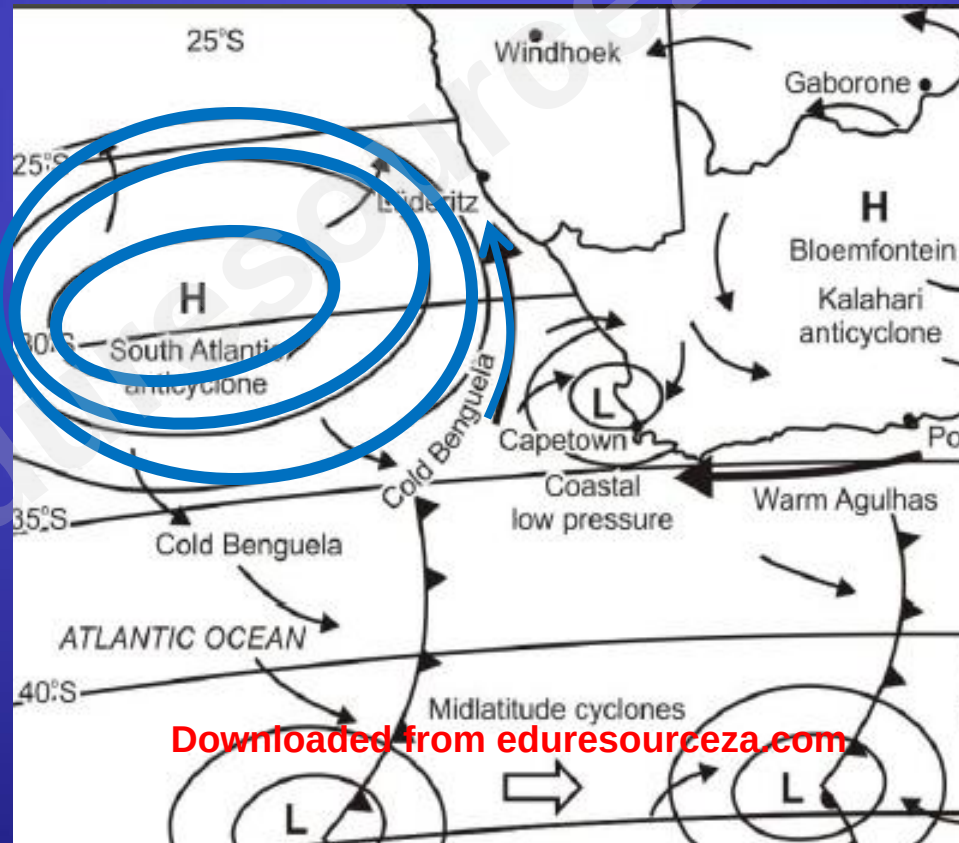




SOUTH ATLANTIC ANTICYCLONE

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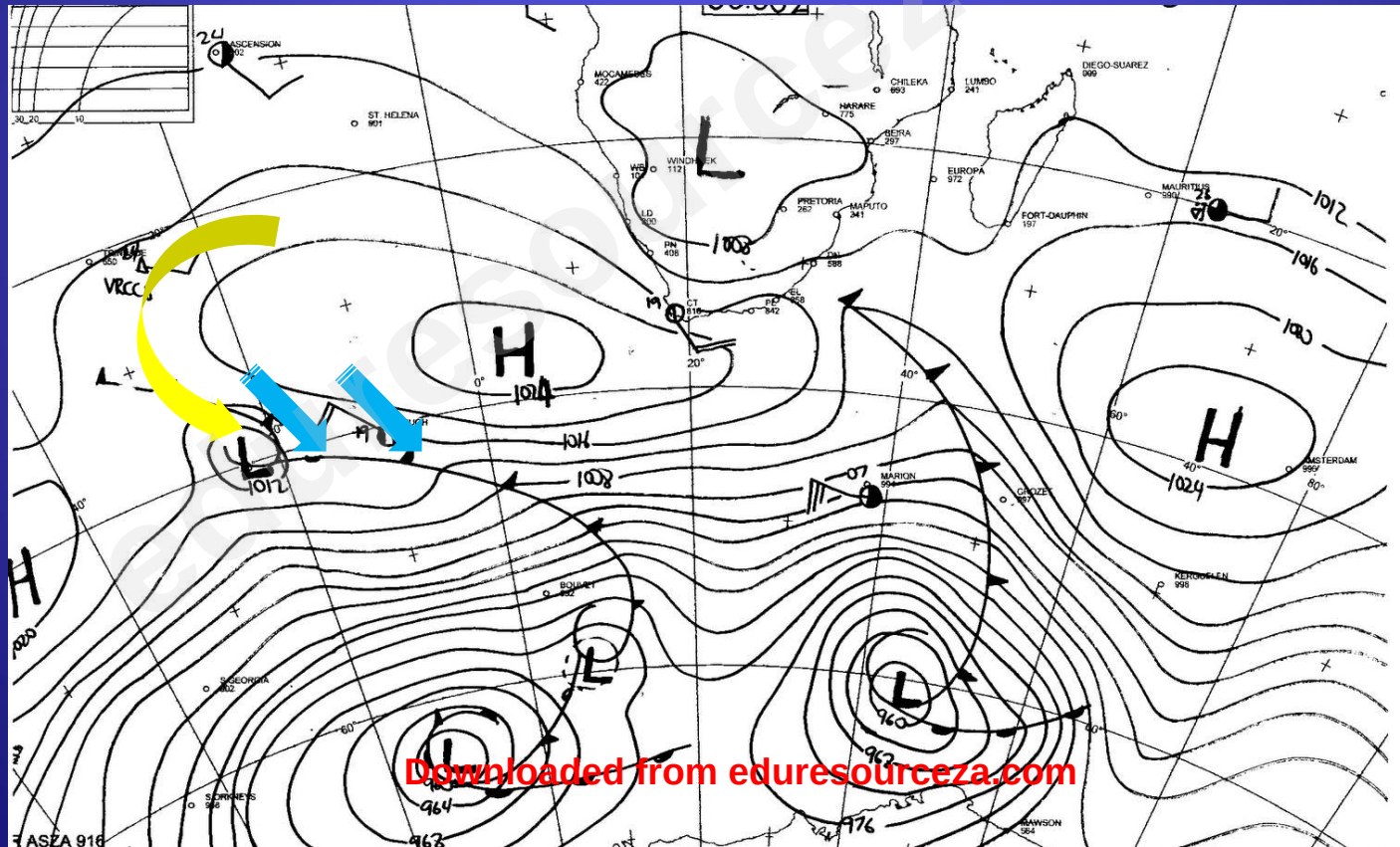
- SAAC moves north with the ITCZ
- Onshore winds move across the Benguela current
 - Not much moisture is picked up
 - Western part of the country is dry

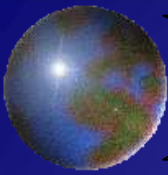


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- The SAAC can deflect mid-latitude cyclones southwards and prevent them from reaching land

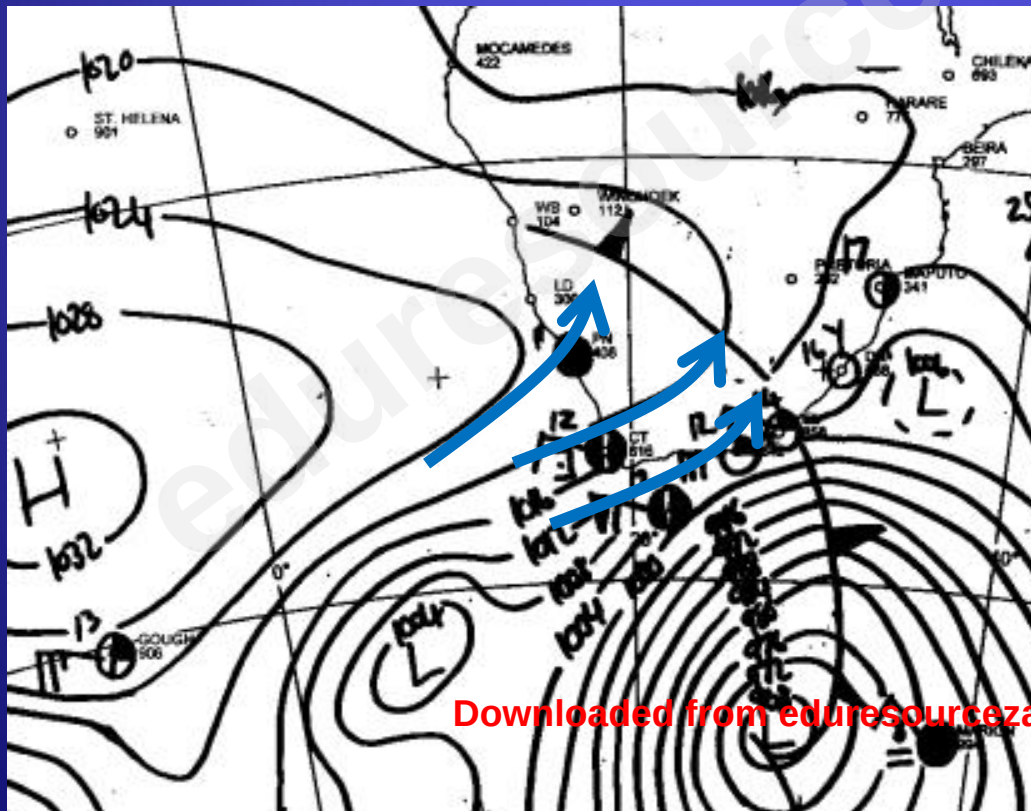




SOUTH ATLANTIC ANTICYCLONE

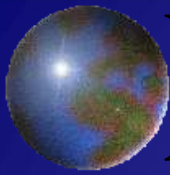
WINTER

- The SAAC can ridge behind the cold front
 - South westerly winds are reinforced
 - Cold front pushes across the land



COLD SNAP

Very low temperatures
Snow in the interior

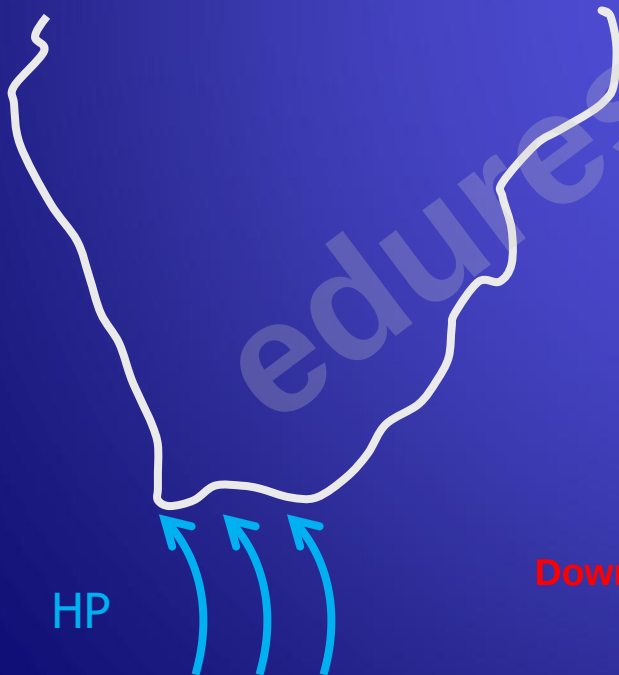


SOUTH ATLANTIC ANTICYCLONE

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SUMMER

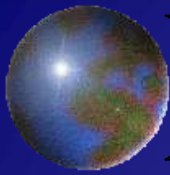
- The SAAC moves north with the ITCZ
- Strong SE wind blows at the Cape
- Winds rise up Table mountain and forms what is known as the "table cloth"



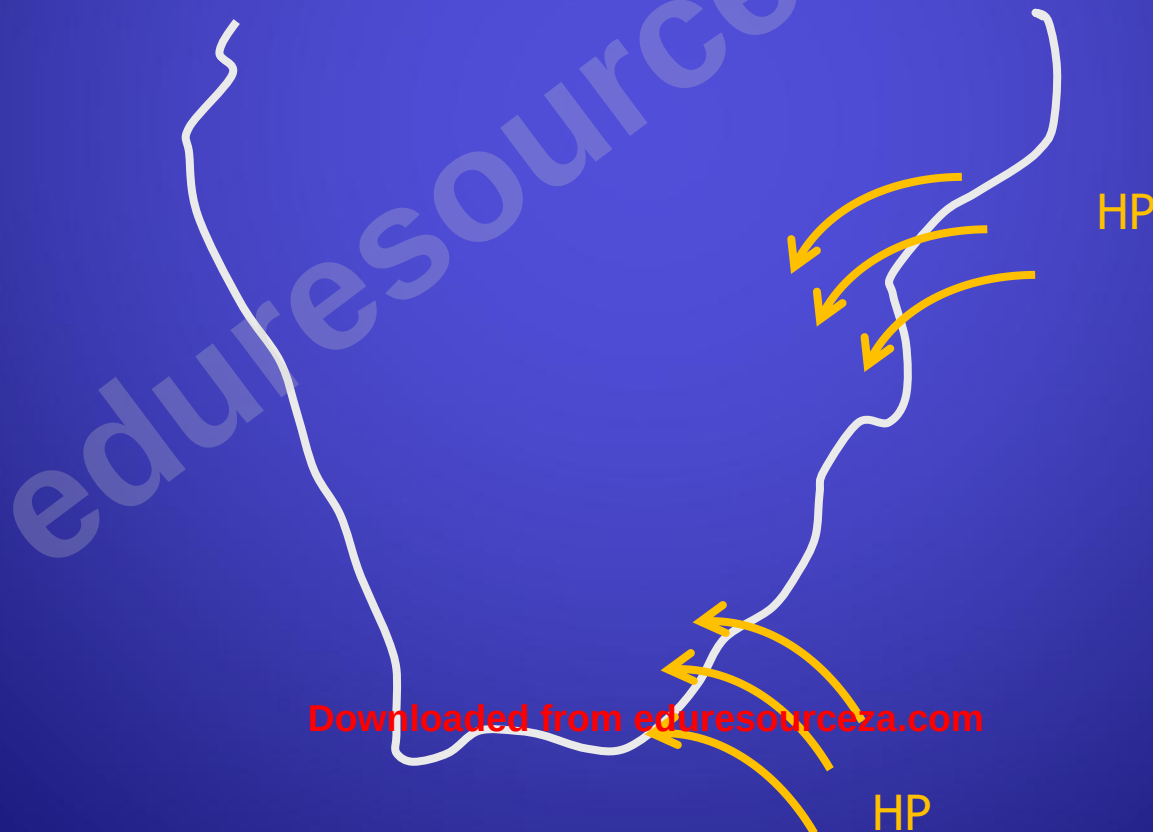
Also known as the Cape Doctor or Southeaster

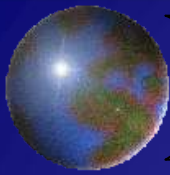


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- May cause NE or SE **onshore winds**
- Blow over warm oceans and bring moisture
 - Rain at the coast
 - Rain over the plateau in summer

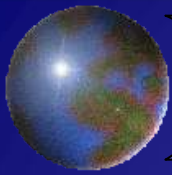




Downloaded from eduresourceza.com **CLIMATOLOGY**

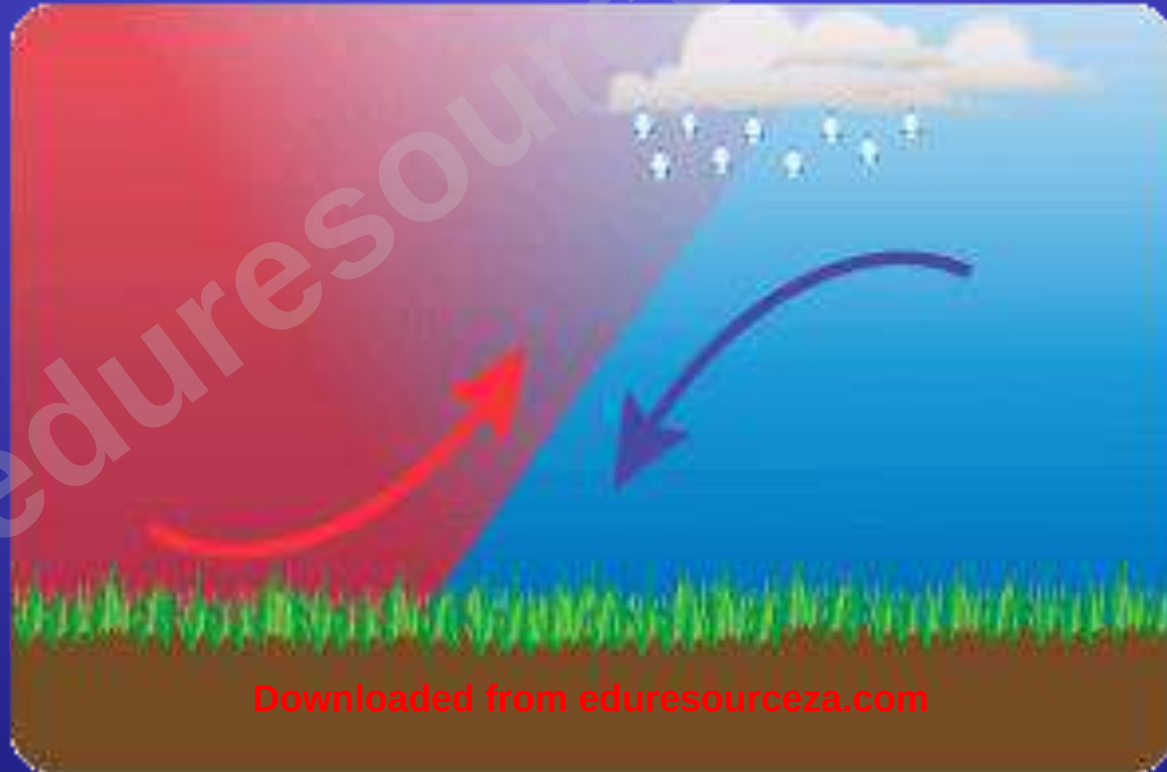
TRAVELING DISTURBANCES

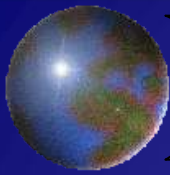
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MOISTURE FRONT AND LINE THUNDERSTORMS

- **Front:** boundary between two air masses with different characteristics
- **Moisture Front:** a front that separates air masses of different humidity





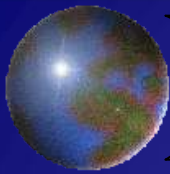
MOISTURE FRONT AND LINE THUNDERSTORMS

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During Summer:

- The Kalahari HP over the interior is lifted
 - Warm, moist air from the South Indian HP flows into the interior from the NE
 - Cool, dry air from the South Atlantic HP flows into the interior from the SW
- The two air masses converge, forming a moisture front
 - The front extends from the SE to the NW across SA
- Convergence causes the warm, moist air to rise, cool and condense to form cumulonimbus clouds
- Rising air creates a **trough of low pressure**

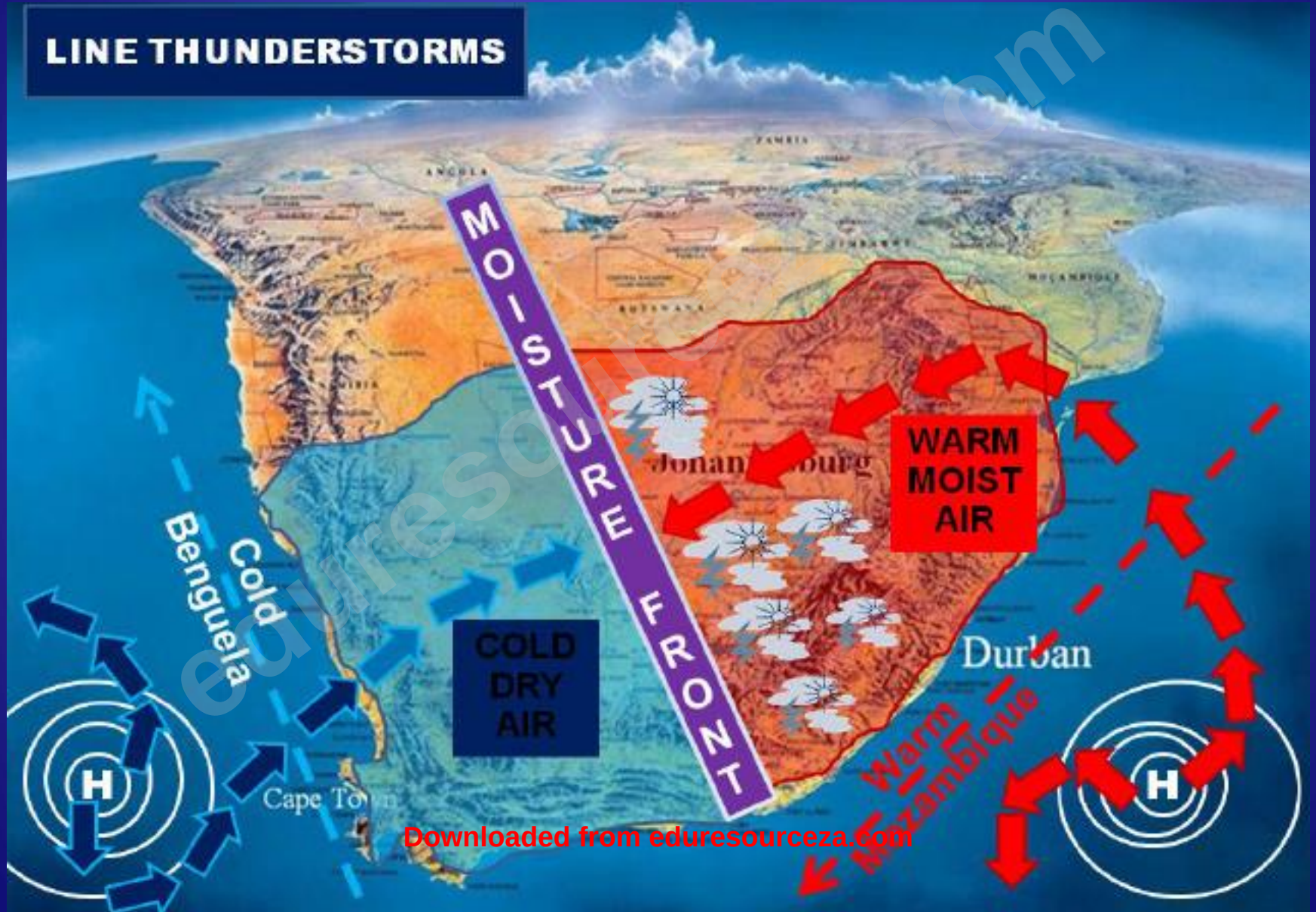
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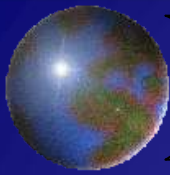
MOISTURE FRONT AND LINE THUNDERSTORMS

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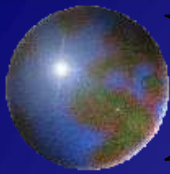
LINE THUNDERSTORMS



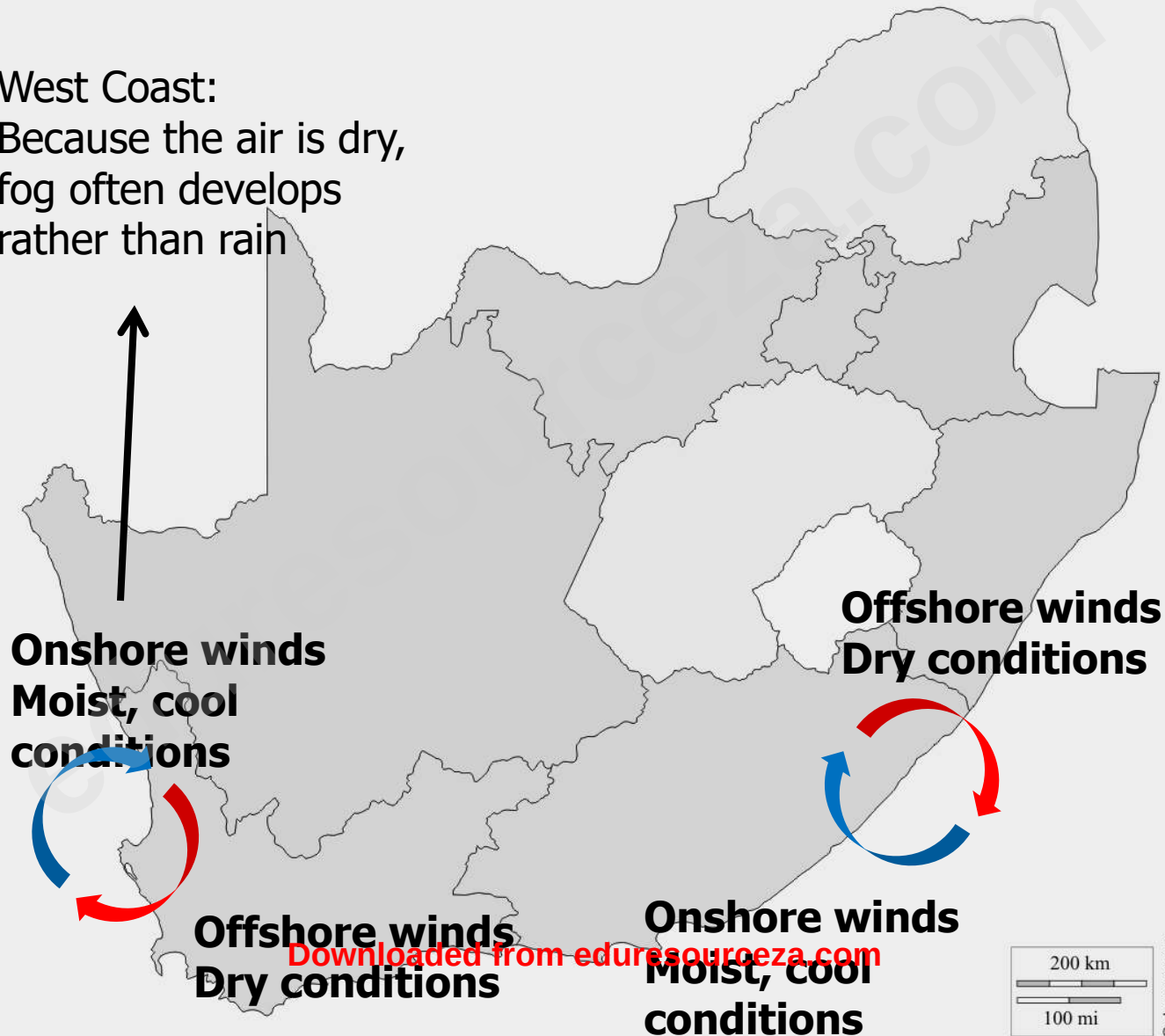
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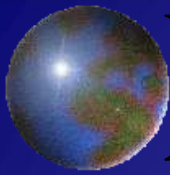


- **Coastal low:** a small LP system that develops on the coast and moves along it from W to E
- Develops in summer and winter
- They are NOT associated with fronts
- Often followed by a frontal depression - MLC

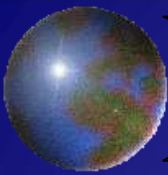


West Coast:
Because the air is dry,
fog often develops
rather than rain

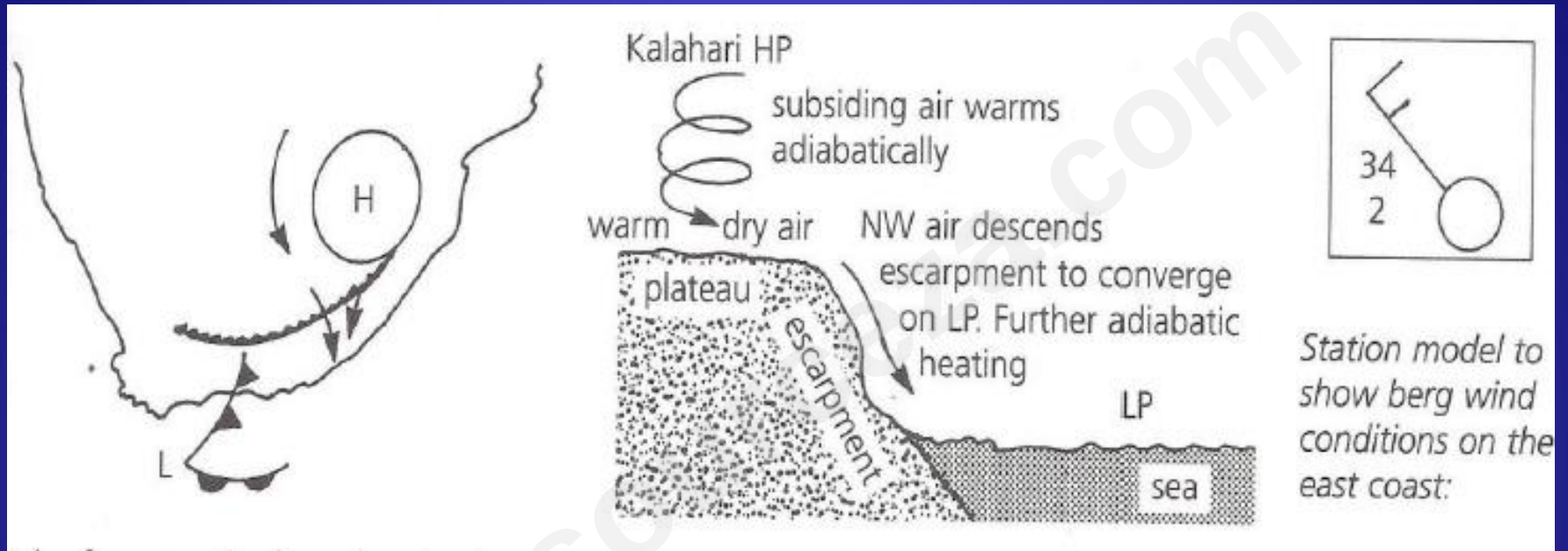




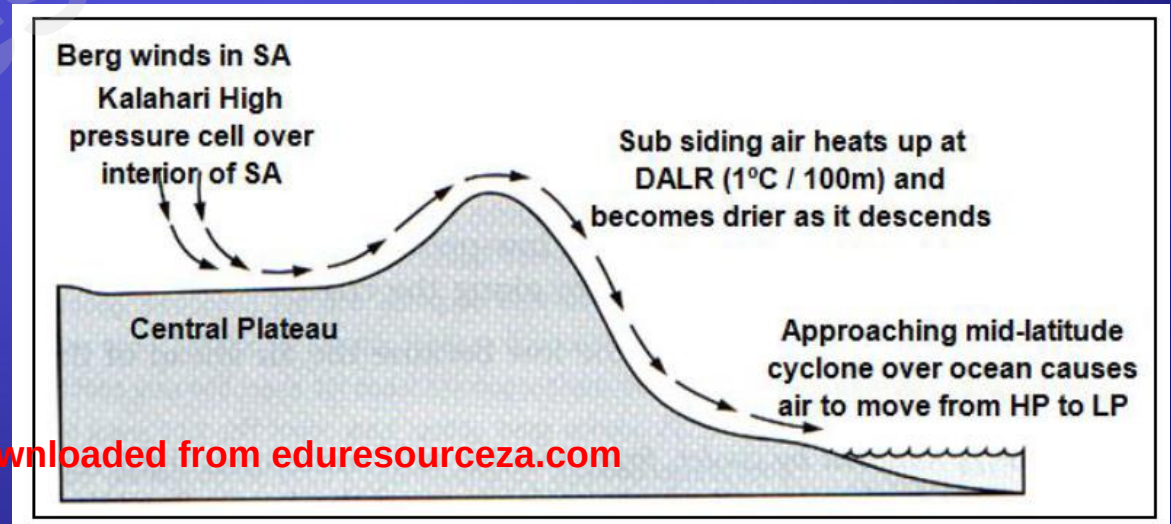
- **Berg Wind:** a warm, dry wind that blows from the plateau to the coast
- Air flows from the Kalahari Hp (over the interior) to a low pressure at the coast
 - LP can be an approaching cold front or a coastal low
- As the air moves down the escarpment (from HP to LP)
 - The air is heated adiabatically
 - Moisture evaporates
- Causes dry, uncomfortable conditions as well as fires

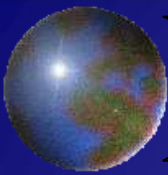


BERG WINDS

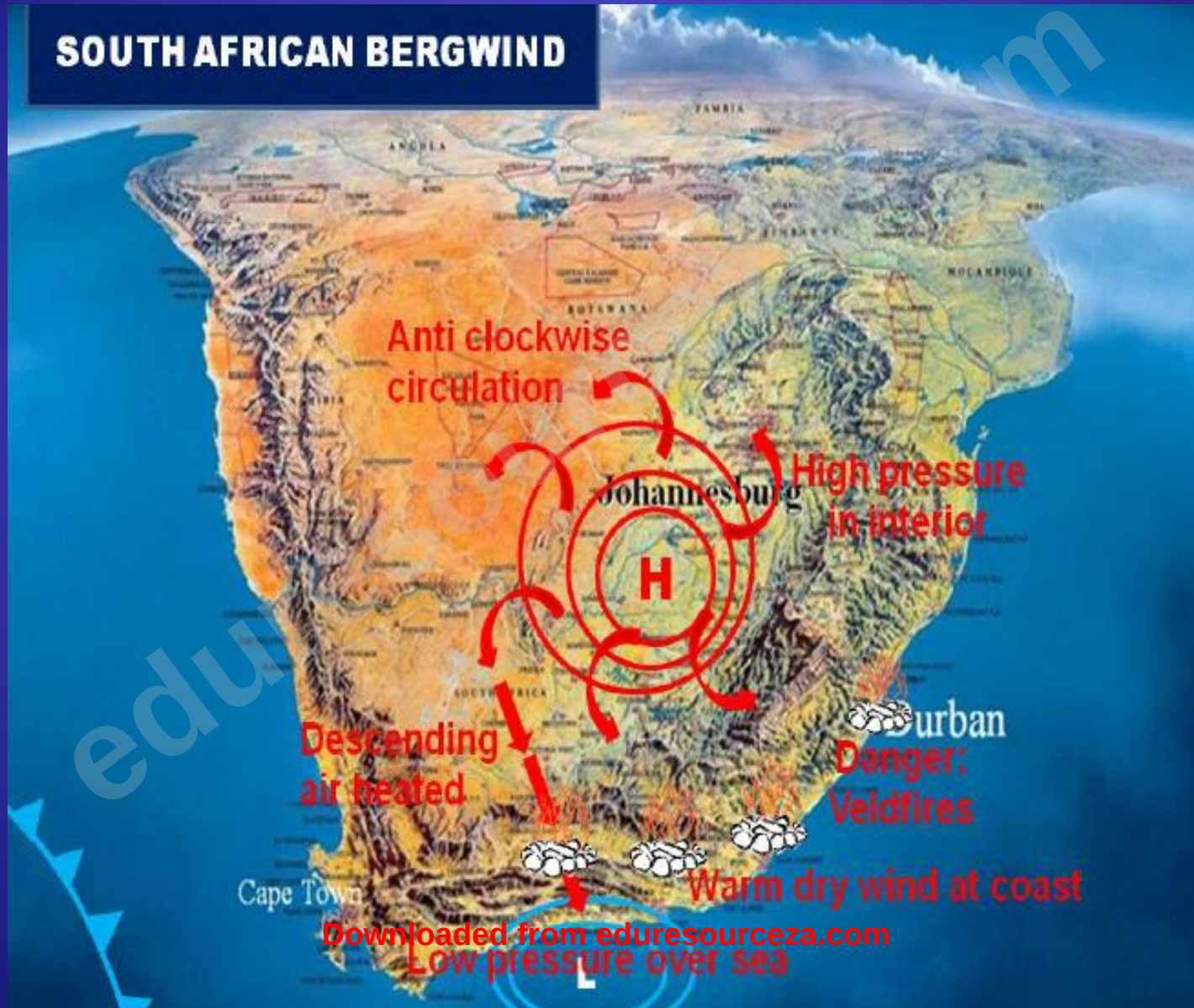


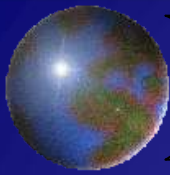
West coast: NE wind
East coast: NW wind





SOUTH AFRICAN BERGWIND





SATELLITE IMAGES AND SYNOPTIC MAPS

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