
DRONESVIP
CIVIL AERONAUTICAL
TRAINING CENTER

AGENDA

- What is meteorology?
- Difference Between Weather and Climate
- Different branches of meteorology
- Weather data
- Aeronautical Meteorology

WHAT IS METEOROLOGY?

“Science that studies the Earth's atmosphere, and the phenomena that occur within it”

DIFFERENCE BETWEEN WEATHER AND CLIMATE

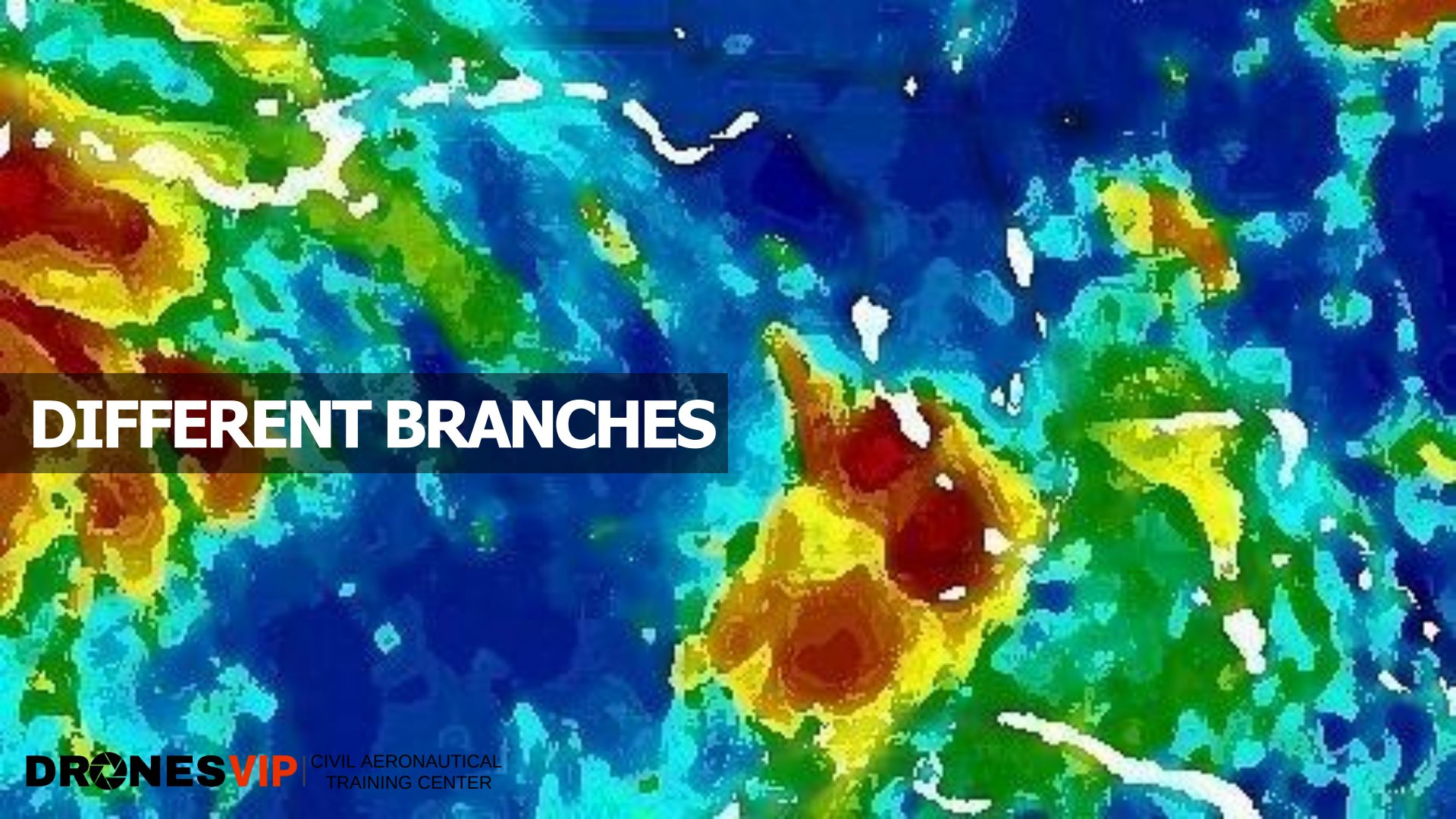
WHAT IS WEATHER?

It is the state or atmospheric conditions of a place or region, at a given time, taking into account the different meteorological parameters or variables that compose it.

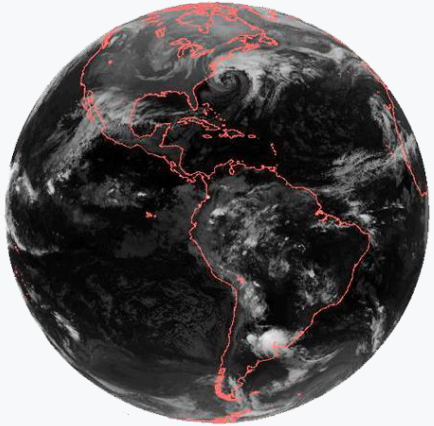
DIFFERENCE BETWEEN WEATHER AND CLIMATE

WHAT IS CLIMATE?

It is the set, at a general level, of the prevailing meteorological conditions of a given place; It is based on data and statistical processing from long periods of records and comprises mean and extreme values, deviations from these means and the reasons associated with these deviations.


DIFFERENT BRANCHES

SYNOPTIC METEOROLOGY



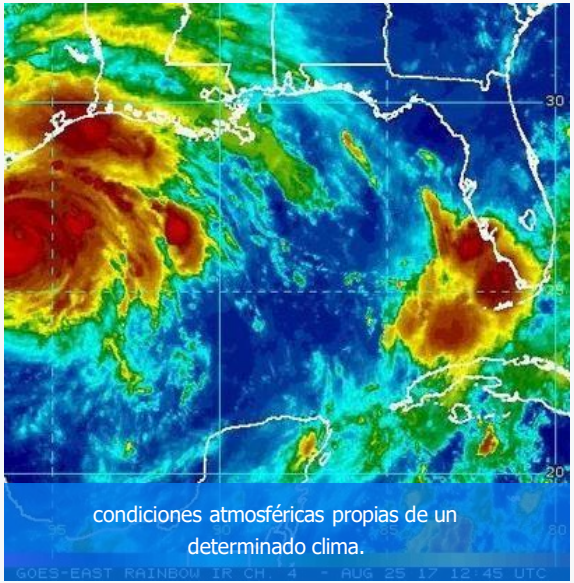
General weather forecast, severe weather alerts, aeronautical and maritime meteorology, etc.

IT IS RESPONSIBLE FOR:

To study the meteorological conditions and phenomena that take place in the atmosphere, in real time, based in observations made at the global or regional level, with the aim of predicting the state of the weather or future meteorological conditions.

Sub-activities: General weather forecast, severe weather alerts, aeronautical meteorology, maritime meteorology, etc.

CLIMATOLOGY



DEFINITION:

Science dedicated to the study of climates in relation to their characteristics, variations, distribution, types and possible determining causes.

"It uses statistical tools to determine the central values, particularly the Mean or Average of the different meteorological variables with which climates can be classified."

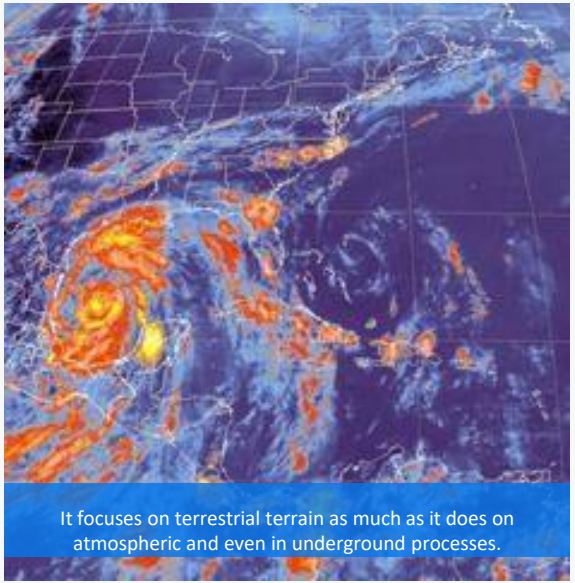
AGROMETEOROLOGY

Measuring device. Weather station.

DEFINITION:

Branch of meteorology dedicated to the study of meteorological and climatic elements, as well as their influence on agricultural activities.

HIDROMETEOROLOGY



It focuses on terrestrial terrain as much as it does on atmospheric and even in underground processes.

DEFINITION:

Branch of meteorology dedicated to the study of meteorological and climatic elements, and their impact on the water resources (river, lake, maritime).

"Hydrometeorology is a climatic science that is often confused with hydrology or is taken as a branch of it. In many other cases it is also considered a branch of meteorological sciences oriented to hydrology."

ENVIROMENT

Solar photometers performing aerosol measurements in the Izaña atmospheric observatory

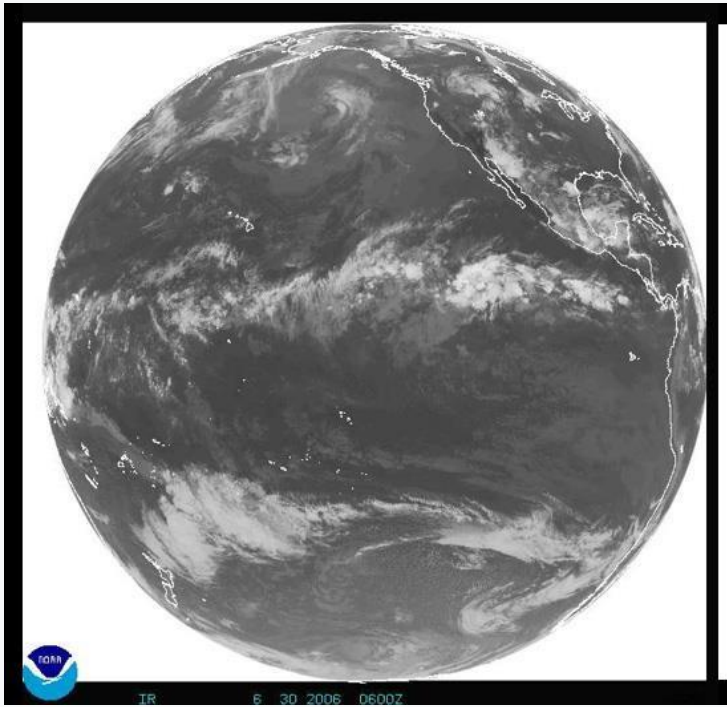
IT IS RESPONSIBLE FOR:

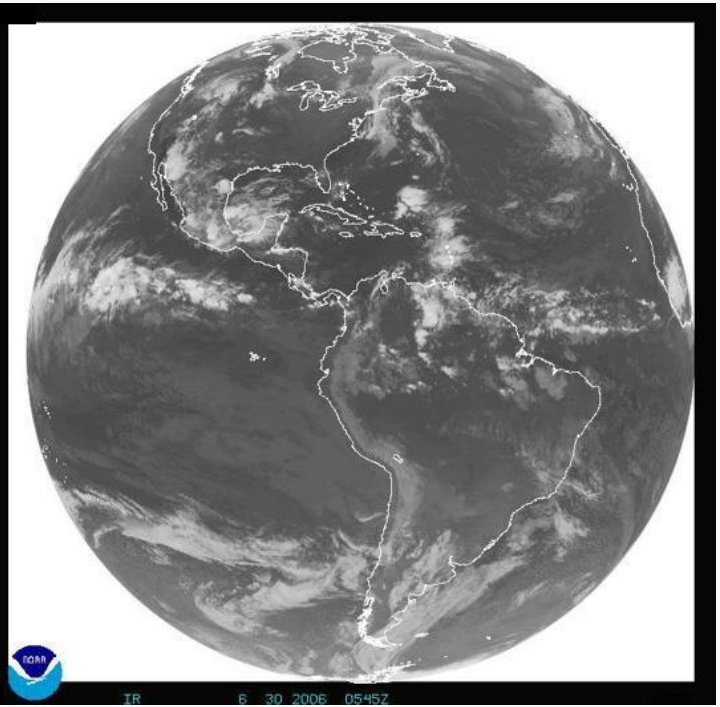
Monitoring and evaluation of elements such as: Radiation (solar and terrestrial), Ozone, Air pollution, etc.

"Human activities in many cases are highly polluting and promote the modification of the environment, and this inexorably leads to a negative impact on the natural balance between the Earth and the atmosphere"

WEATHER SCALLES

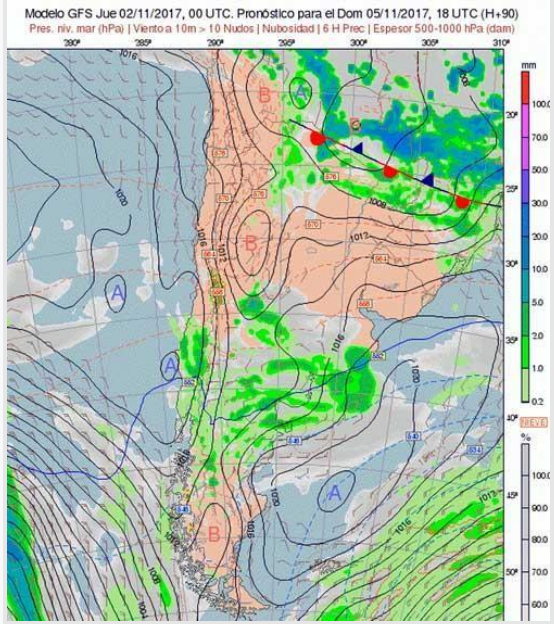
GLOBAL (PLANETARY) SCALE



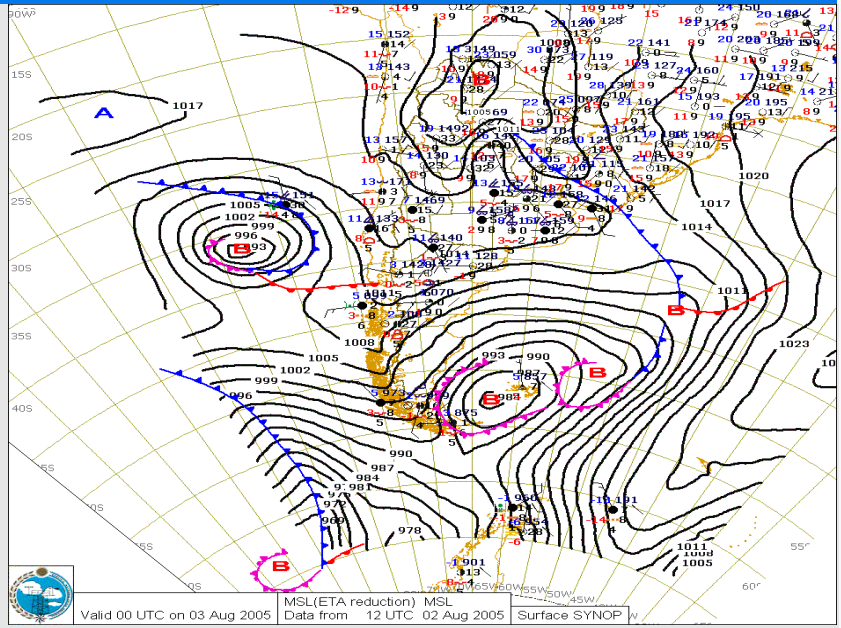


WEATHER SCLAE

SURFACE WEATHER CHART

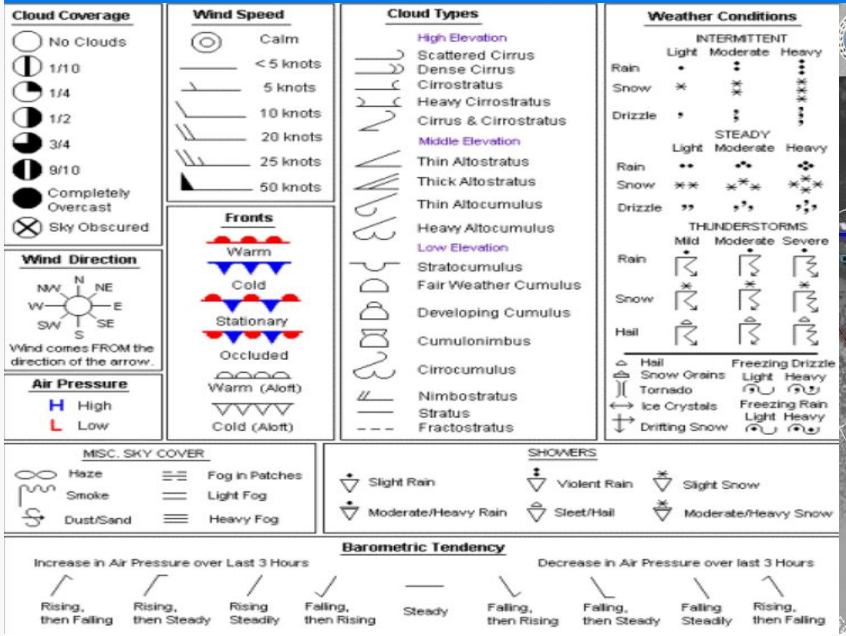


Synoptic Scale: Days / From 200 to 3000

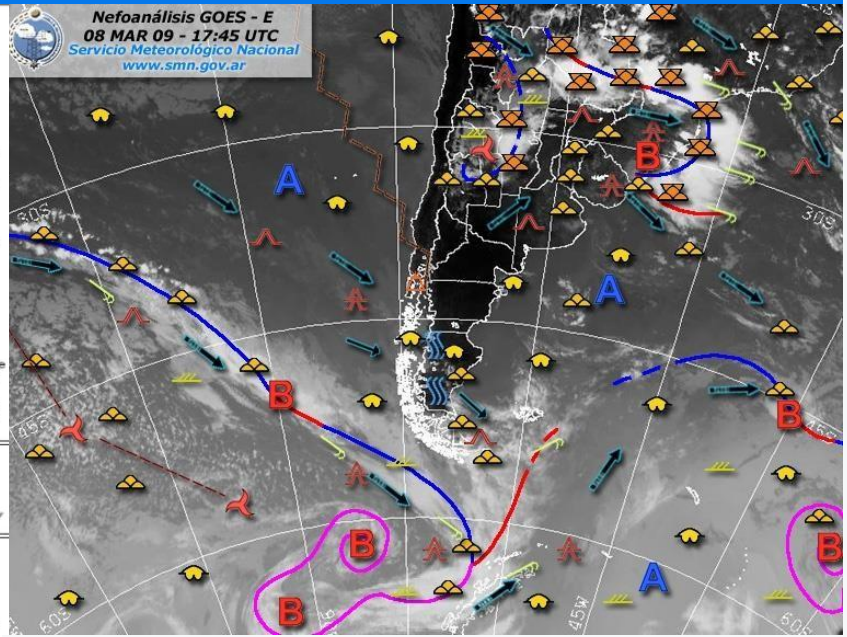


WEATHER SCLAE

NEFOANALYSIS



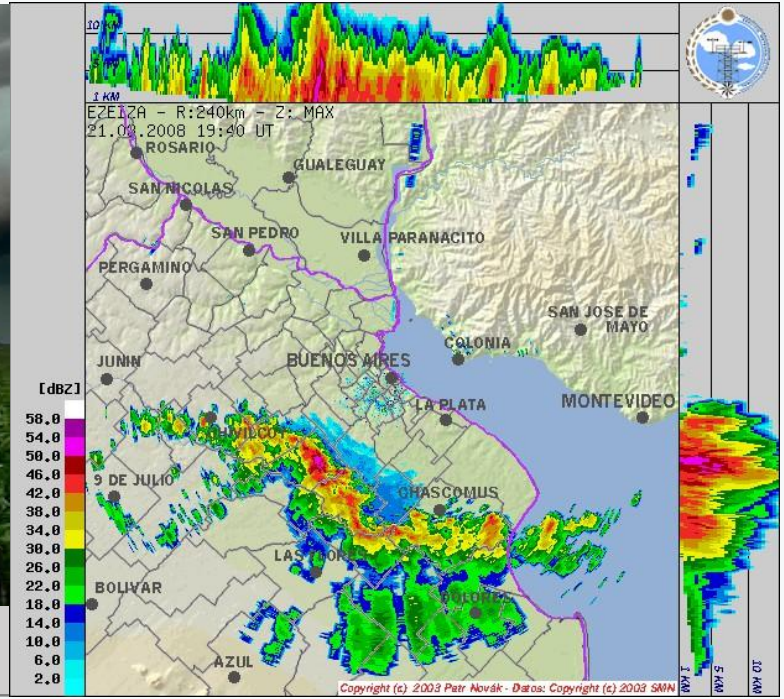
Synoptic Scale: Days / From 200 to 3000



WEATHER SCLAE

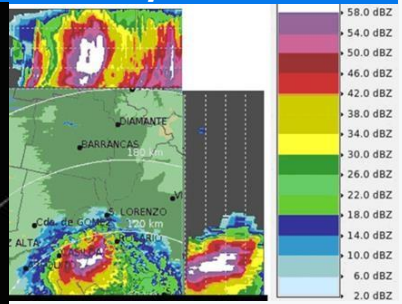
Meso scale: Hours / from 10 to 250 km.

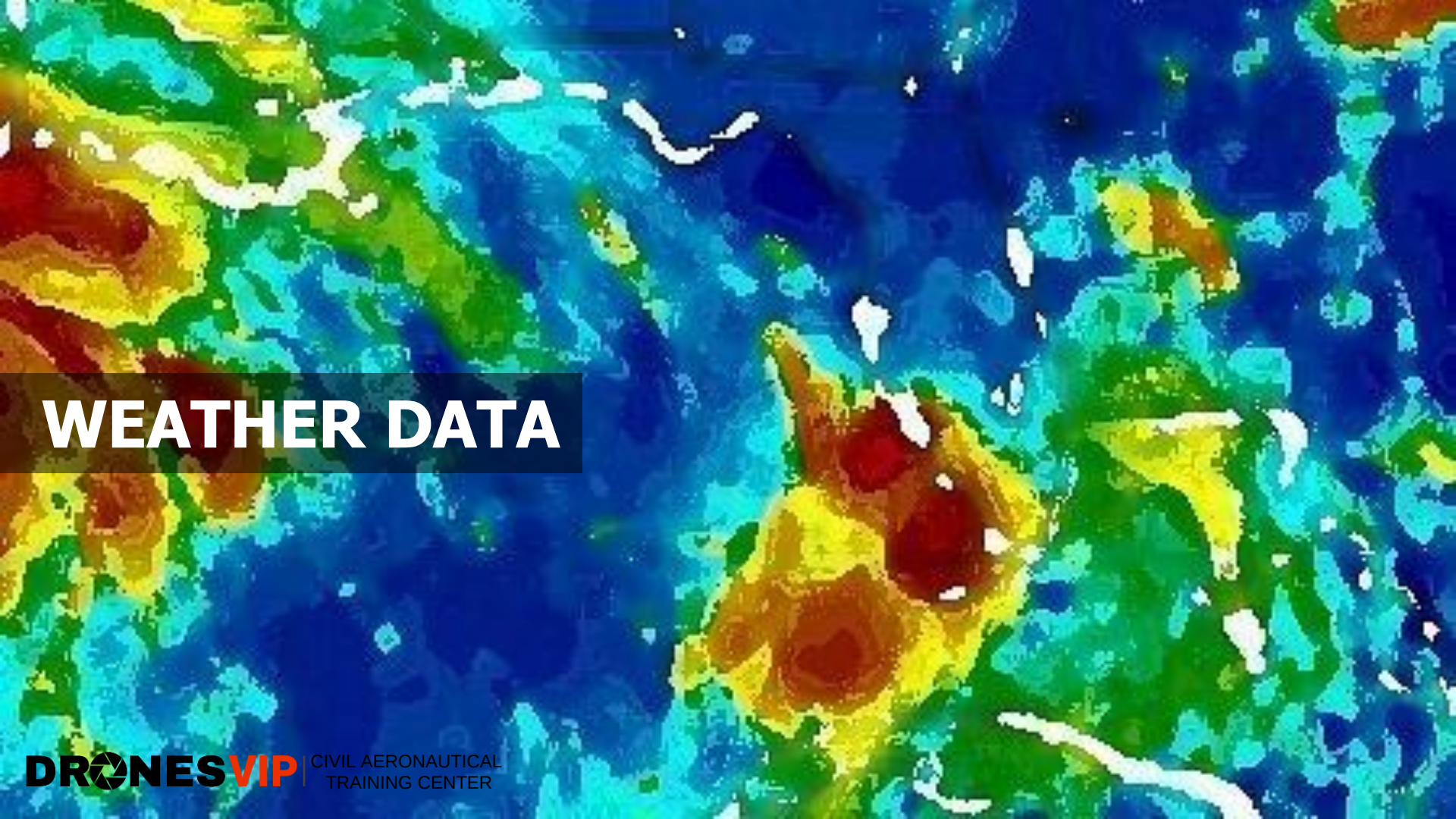
Squall Line



WEATHER SCLAE

CB / Supercell | **Micro Scale: Hours / 2.5-25km**




WEATHER DATA

PLATAFORMAS DE OBSERVACIÓN

SURFACE WEATHER STATIONS
(Synoptic, Aeronautical, Climatological, Agrometeorological, etc.)

HIGH ALTITUDE WEATHER STATIONS:
(Radio polls).

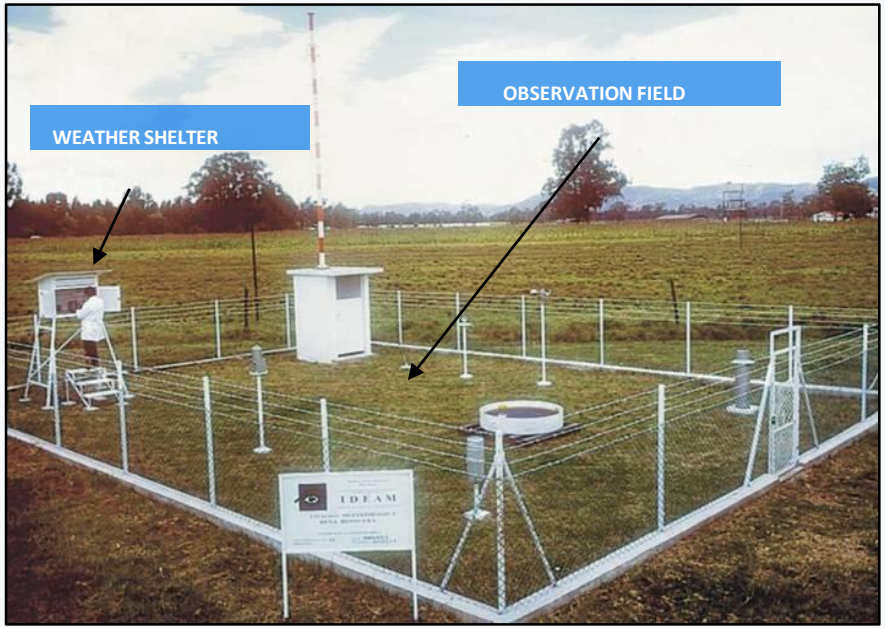
VESSELS IN NAVIGATION AND BUOYS
(fixed and adrift).

METEOROLOGICAL SATELLITES
(Geostationary and Polar Orbits).

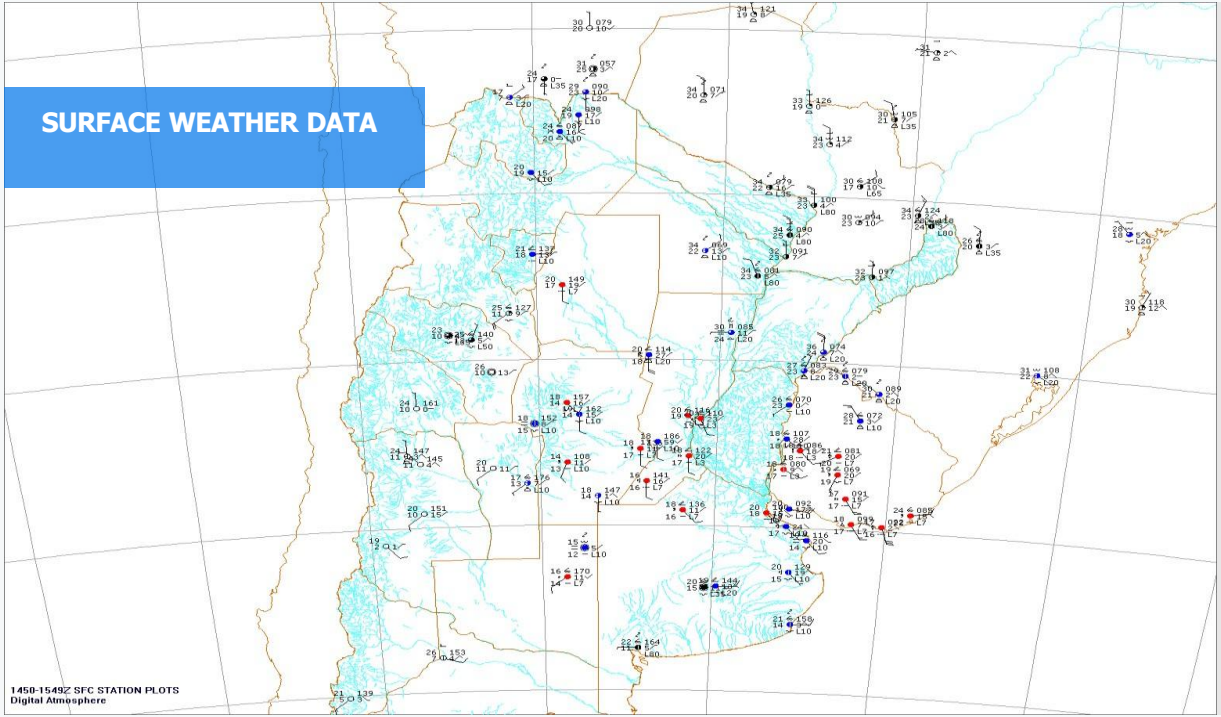
WEATHER RADARS

DATA FROM AIRCRAFT
(AIREP / AMDAR)

SURFACE WEATHER STATIONS



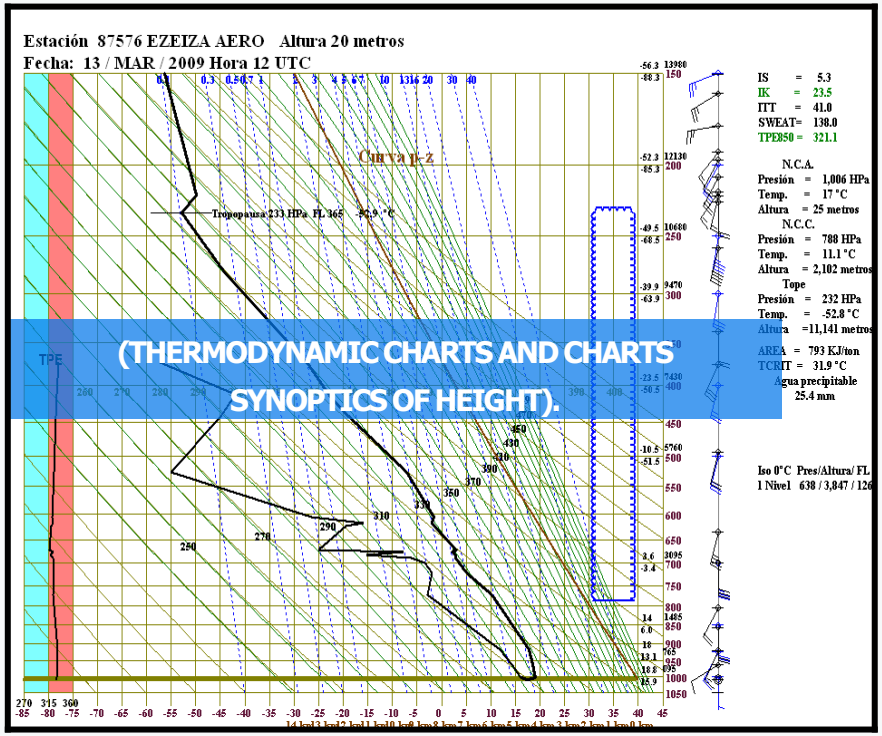
SURFACE WEATHER STATIONS



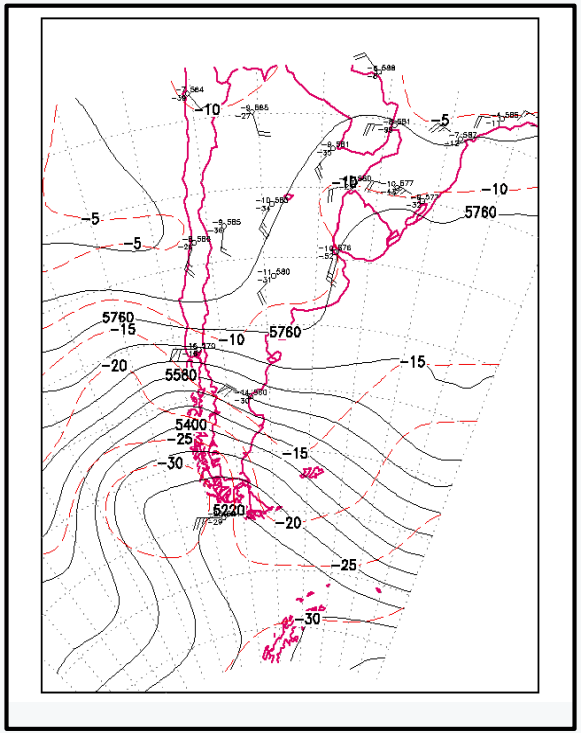
HIGH-ALTITUDE WEATHER STATIONS (RADIO POLLS)

RADIO SOUNDER LAUNCHES

HIGH-ALTITUDE WEATHER STATIONS (RADIO POLLS)



(THERMODYNAMIC CHARTS AND CHARTS SYNOPTICS OF HEIGHT).



VESSELS IN NAVIGATION AND BUOYS (FIXED AND DRIFTING)

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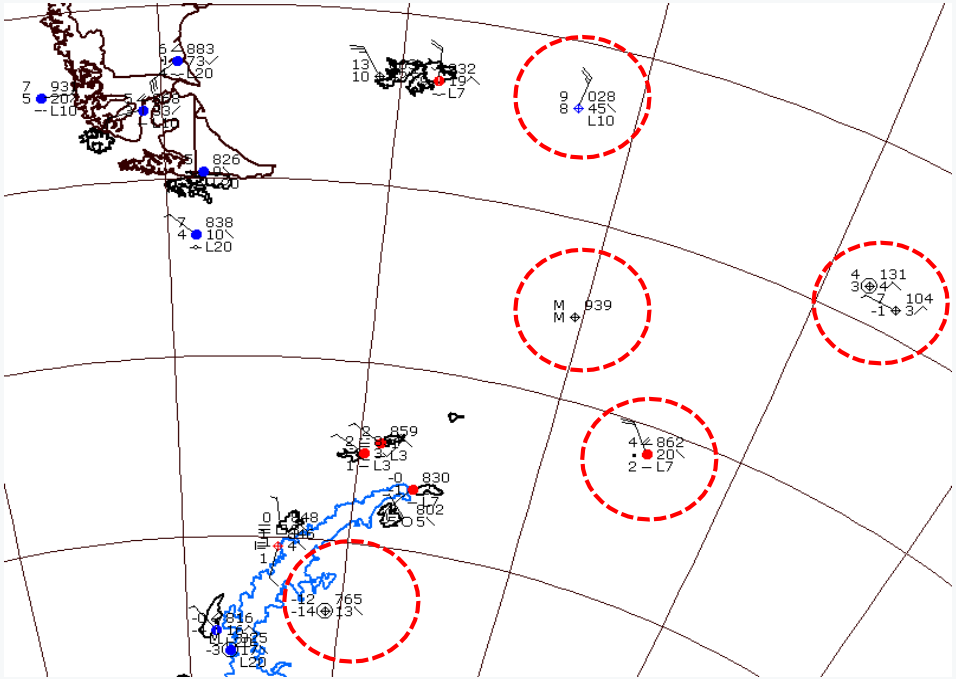
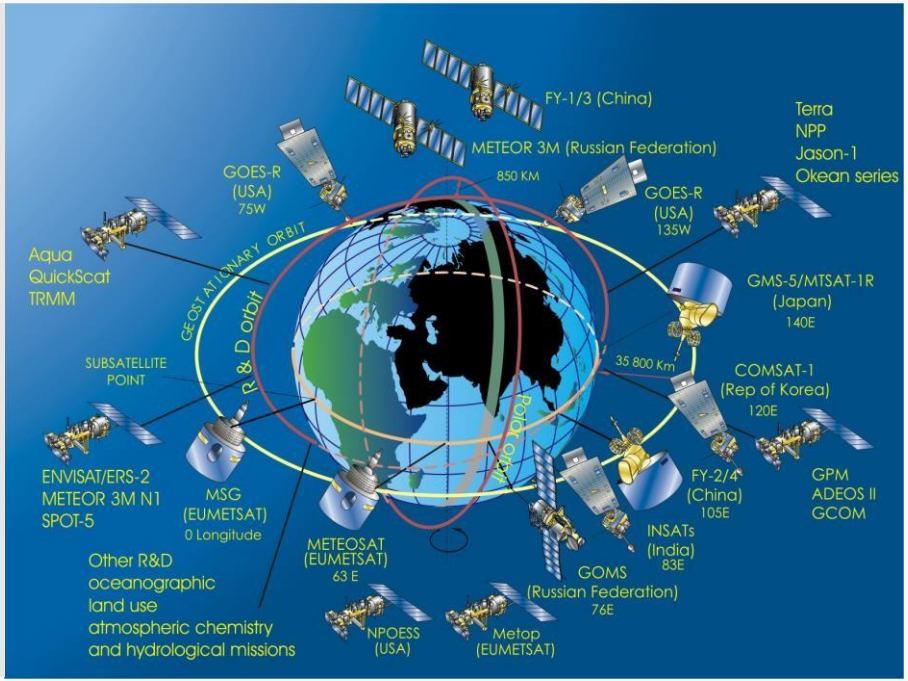


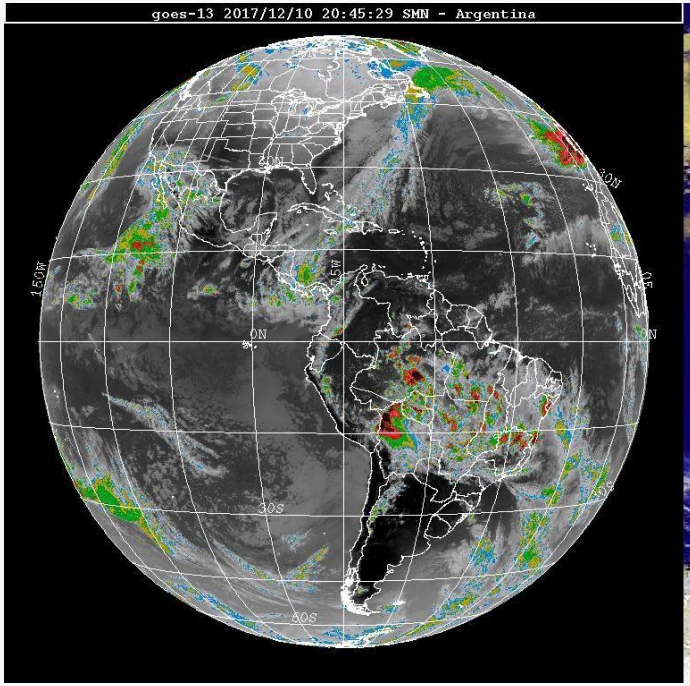
OBSERVATION DECK

METEOROLOGICAL SATELLITES (GEOSTATIONARY AND POLAR ORBITS).

Constellation of Meteorological Satellites



METEOROLOGICAL SATELLITES (GEOSTATIONARY AND POLAR ORBITS)



WEATHER RADARS

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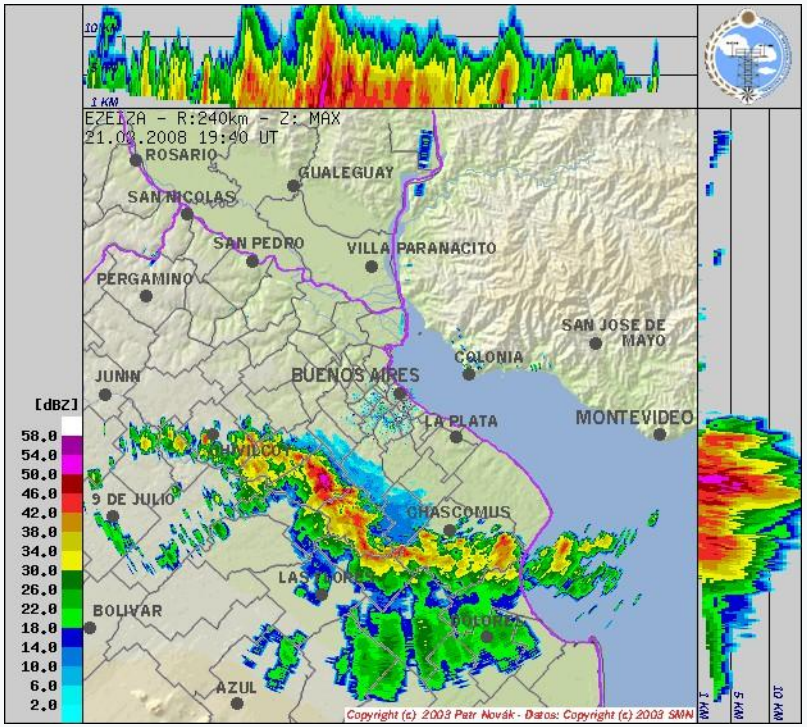
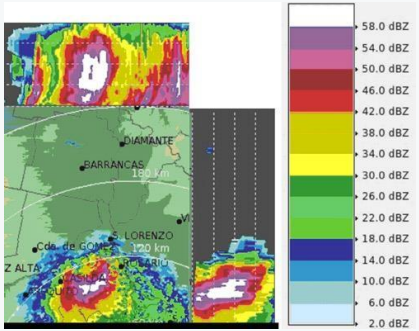
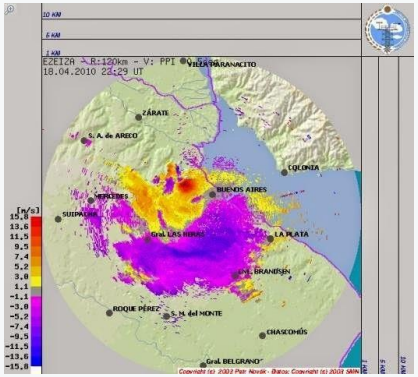






DATA FROM AIRCRAFT (AIREP / AMDAR)

DATA FROM AIRCRAFT (AIREP / AMDAR)

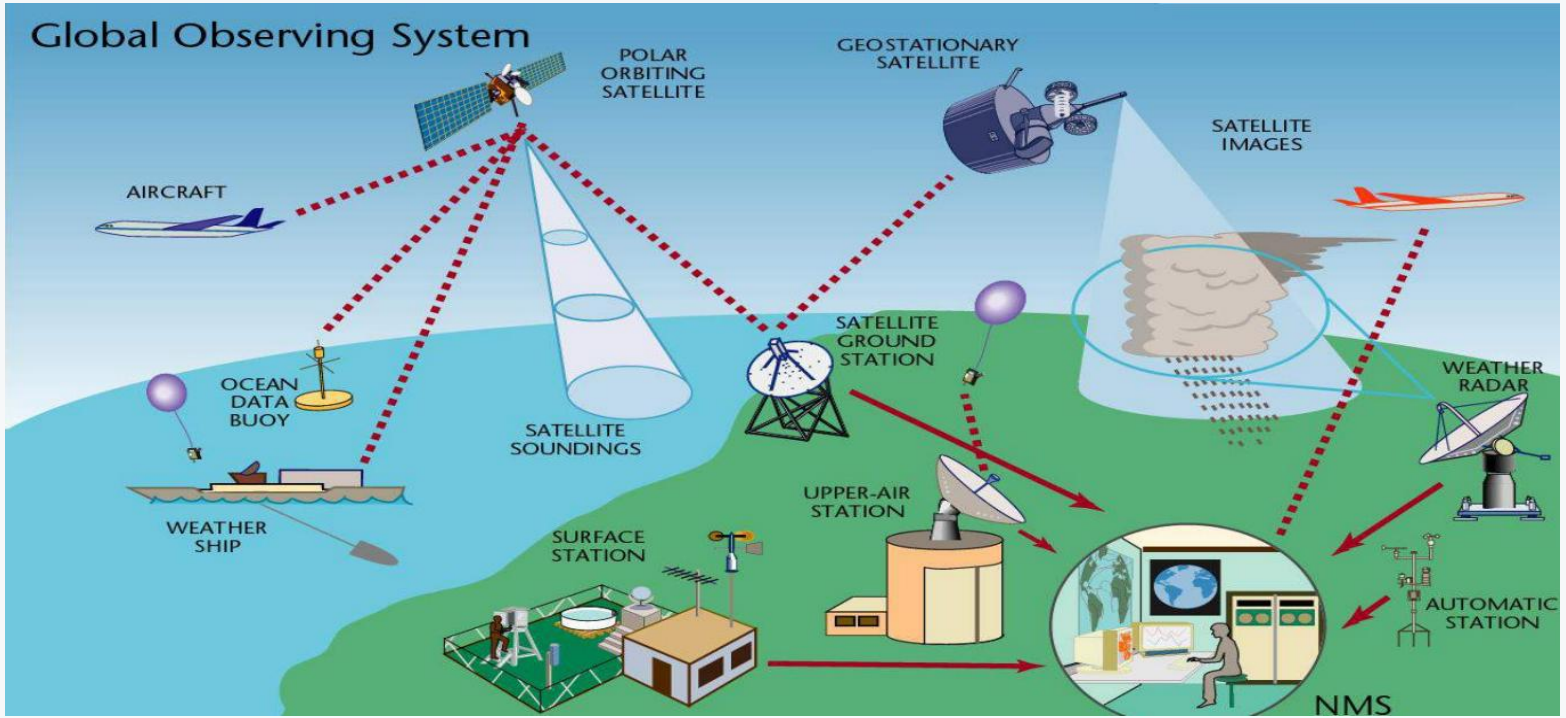
ARP LAN 603 ALBAL 1050Z F340 MS48 209/54KT TUB LIG=

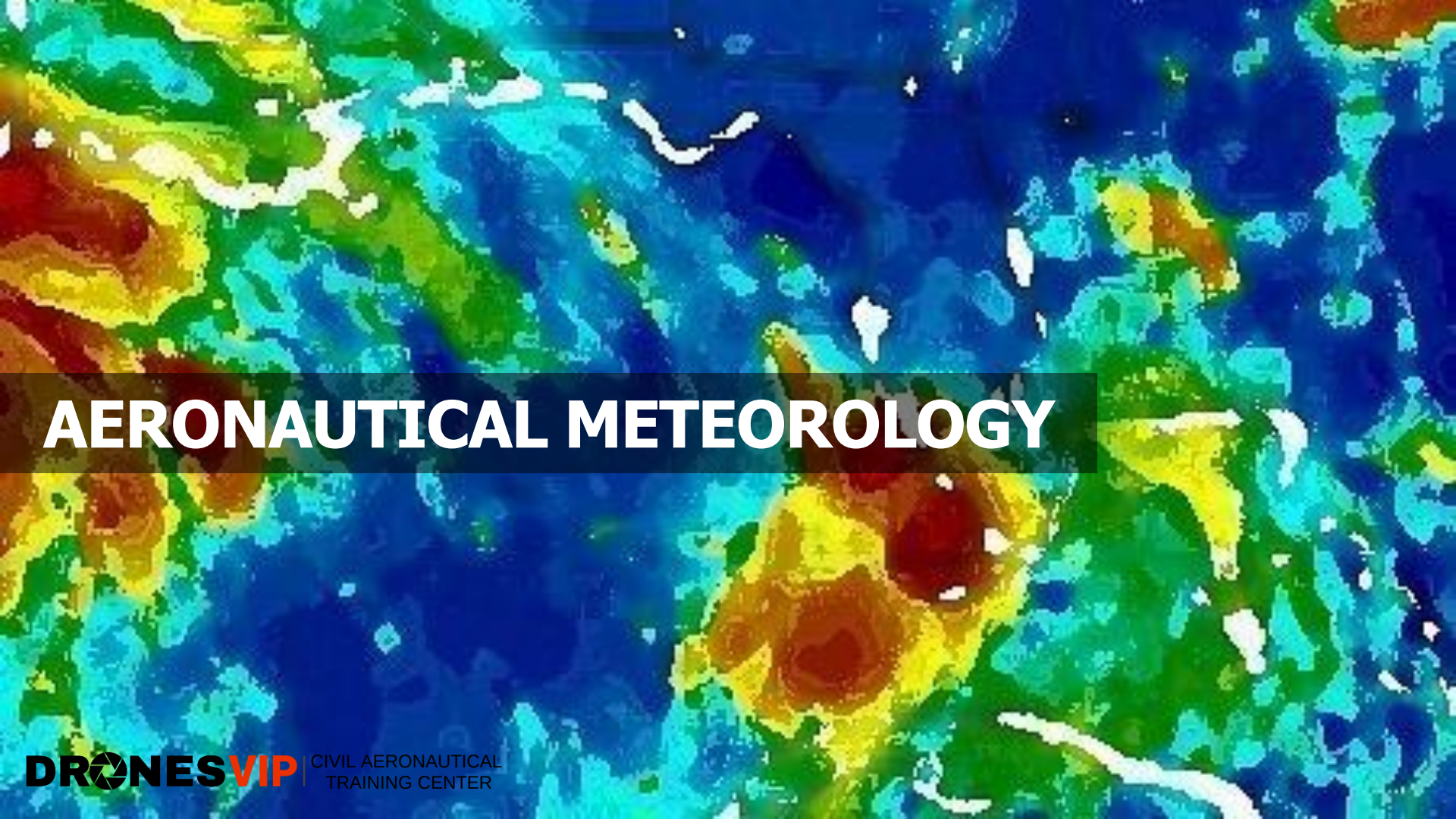
ARP LXP 750 NEBEG 1125Z F230 MS23 204/24KT CAT MOD=

ARS LAN115 SPQU/SPJL VA CLD OBS AT 1158Z FL180/230
MT UBINAS LOC S1621 W07054=

ARP ARG1892 VIE 1416 F360 MS55 204/40 KT ISOL CB NW TOP FL340 =

DISTRIBUTION OF METEOROLOGICAL DATA (OMM - ICAO)





AERONAUTICAL METEOROLOGY

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AERONAUTICAL METEOROLOGY

ICAO (Annex III)

Member States → Meteorological Authority

To provide meteorological advice to aeronautical users. The purpose of this service will be to contribute to the safety, regularity and efficiency of national and international air navigation.

AERONAUTICAL METEOROLOGY

GLOBAL WEATHER BUREAU AND AREA FORECASTING SYSTEM

This System is made up of the following dependencies

01 WAFC
World Area Forecast Centers

02 EMA
Aerodrome Weather Stations

03 OVM
Meteorological Vigilance Offices

04 OMA/OI
Aerodrome Meteorological Offices. Meteorological Information Offices.

05 VAAC
Volcanic Ash Advisory Centers

06 TCAC
Tropical Cyclone Advisory Centers

AERONAUTICAL METEOROLOGY

01 **WAFC:** World Area Forecast Centers.

Generate charts:

SIGWX: Significant weather forecast.

WIND/TEMP: Wind and temperature forecast for the different flight levels.

02 **EMA:** Aerodrome Weather Stations

It generates **METAR and SPECI** reports, which give information on the weather conditions that take place at an aerodrome at a given time, thus defining the met conditions. officers of the same.

AERONAUTICAL METEOROLOGY

03 **OVM:** Meteorological Vigilance Offices.

Maintains met. About the information region. of flight in its jurisdiction, issues routine and special reports **(TAF, PRONAREAS AND SIGMET)**, and provides advice to the different aeronautical users (Briefing, route forecasts, etc.).

04 **OMA/OI:** Aerodrome Meteorological Offices. Meteorological Information Offices.

They provide advice to the different aeronautical users (Briefing, route forecasts, etc.). And it provides all kinds of weather information generated by other met centers.

AERONAUTICAL METEOROLOGY

05 VAAC: Volcanic Ash Advisory Centers.

They provide advice to **OVM** and **ATS** services (through **VAA** reports), on the position, vertical and horizontal extension and actual and predicted displacement of volcanic ash plumes present in the atmosphere.

06 TCAC: Tropical Cyclone Advisory Centers.

They provide advice to **OVM**, **WAFC** and **ATS** services on the position and predicted displacement of Tropical Cyclones and their associated cloud systems.

QUESTION TIME!

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CAPACITATION