

# Introduction to Dep. of Earth Sciences, NTNU



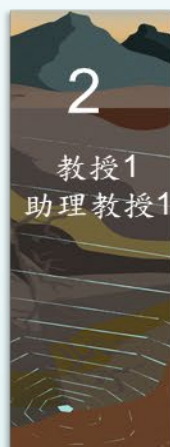
# Development goal

Be critical thinkers and doers!

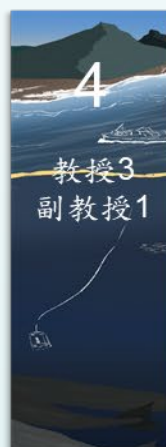
地質組  
Geology



地物組  
Geophysics



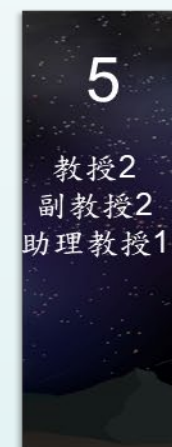
海洋  
Oceanography



大氣組  
Atmospheric  
Sciences



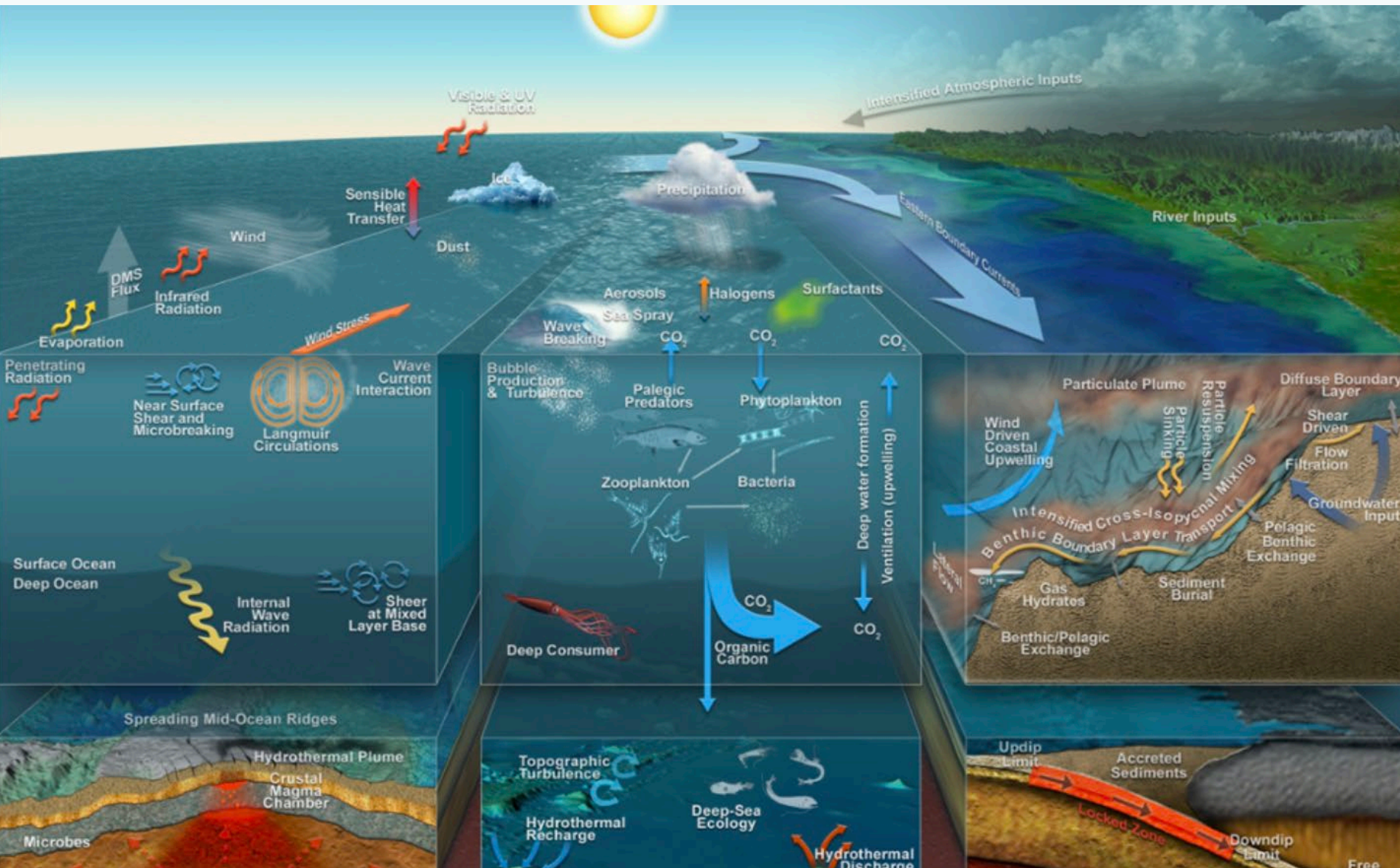
天文組  
Astronomy



Through development and application of new tools and technologies, we pursue field, lab, experimental, and modeling studies of Earth and other solar system bodies .

# Science of Earth and beyond is everything

Controlling our live: food, water, heat, resources, and the future



# Astronomy

## multiscale astrophysical phenomena

Star formation, Planetary Science,  
Radio astronomy, Astrochemistry,  
X-ray and extragalactic astronomy,  
Formation and evolution of galaxies



# Atmospheric Science

## multiscale weather phenomena

Climate modeling,  
Mesoscale, mountain, synoptic, monsoon meteorology,  
Severe weather system  
Cloud-radiation interaction,  
Air-sea interaction



# Geology

## multiscale geological phenomena

Geodynamics plate reconstruction,  
Sequence seismic stratigraphy,  
Regional tectonics of southeast Asia  
Stable isotope geology,  
Paleoenvironmental change  
Geochemistry, Core analysis,  
Igneous Petrology  
Petrology



# Oceanography

## multiscale physical oceanography

Physical oceanography,  
Numerical modeling,  
Remote sensing,  
Typhoon-ocean Interaction,  
Regional geology,  
Science education



# Geophysics

## multiscale geophysical phenomena

Geophysics,  
Geomagnetism, gravity,  
Planetary seismology,  
Observational seismology,  
Environmental seismology

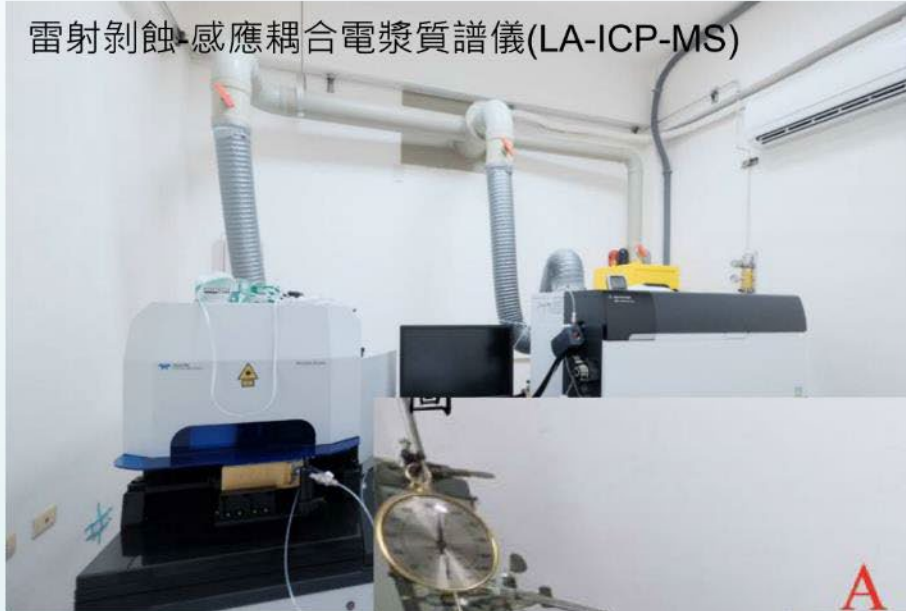


# Lab and facilities: MS



## Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

雷射剝蝕-感應耦合電漿質譜儀(LA-ICP-MS)



**Mass spectrometry** is one of the best techniques for analyzing the structure of a molecule.

## Isotopic Ratio Mass Spectrometer

穩定碳氧同位素比例質譜儀IR-MS



# Lab and facilities: MS



VG1200S MS

VG3600 MS

Nu Noblesse MS

$^{40}\text{Ar}/^{39}\text{Ar}$  aging lab



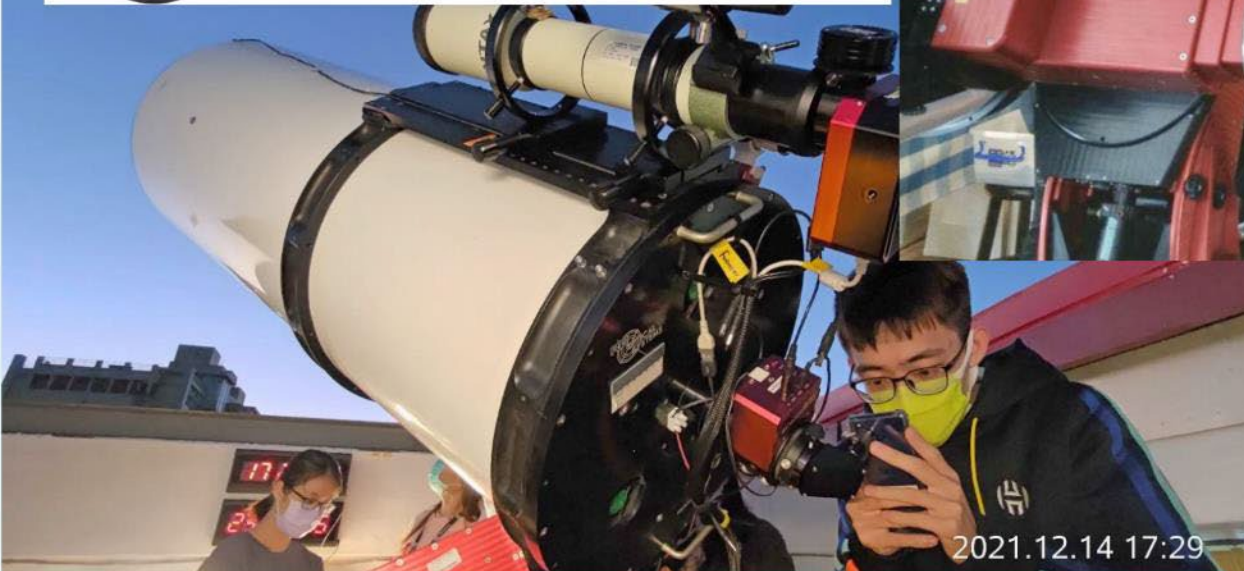
They are very powerful analytical instruments that allow the users to obtain the best quality of any data samples.

# Lab and facilities: Observatory



Optical Telescopes on campus : 40cm RC16 、Paramount ME, Schmidt–Cassegrain 40cm telescope, GOTO 15cm, refractory telescope 。

Collaboration: Optical & Infrared - Lulin 1m telescope, CFHT, Subaru; Radio - SMA, JCMT, ALMA (through EAO and ASIAA); Spacecraft missions



This is a department that you have plenty of opportunities to do outdoor surveys!



海洋

Oceanography fieldtrips

地物



Geophysical fieldtrips

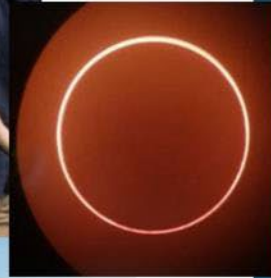


大氣



Atmospheric Sciences fieldtrips

天文



Astronomical fieldtrips



地質

Geological fieldtrips

# Joint Field Excursion of NTNU-Kyushu



Excursion Introduction



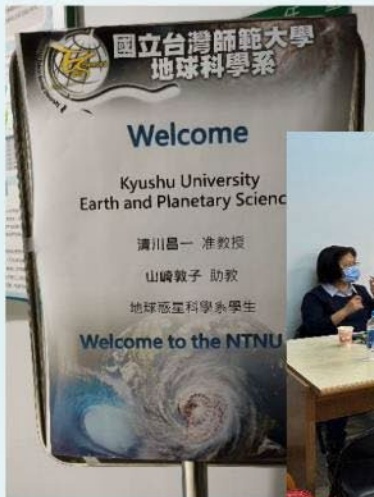
Lab Tour

2023/3/17~24



Research Cooperation?

Welcome Party



# Joint Field Excursion of NTNU-Kyushu



# From core ability to future career

The course and project training in individual fields allow the student to be qualified to do these:

