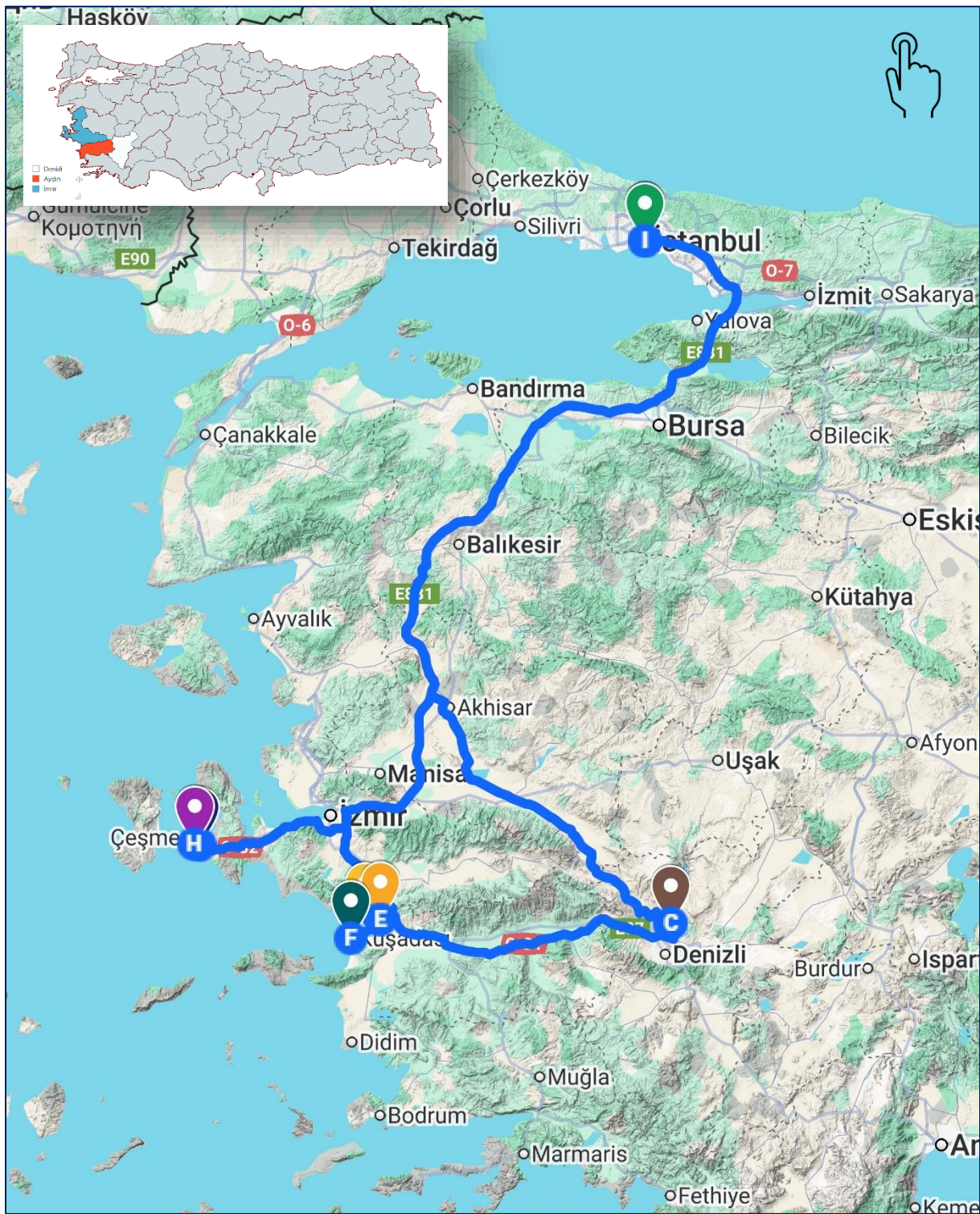


Post - Igeo Fieldtrip II

From Geological Times to Ancient Times

Pamukkale, Ephesus, Şirince, Kuşadası

August 18 –20, 2026



Program:

Day 1: August 18th

- After picking up guests from campus (approx. 22:30/17th August), we will arrive in Denizli after approximately 8-9 hours of travel.
- After breakfast, we will visit the Pamukkale Travertines and the ancient city of Hierapolis.
- Dinner and Overnight Stay: Lycus River Thermal Hotel



The Pamukkale travertines are white terrace formations created by hot springs emerging to the surface in the Denizli Basin. As underground waters pass through rocks such as limestone and marble, they become enriched in calcium carbonate. When this hot water comes into contact with air, the carbon dioxide (CO₂) within it quickly evaporates; the water reaches saturation, and calcite crystals begin to precipitate. This process, repeated over thousands of years, creates the layered, cotton-like travertine terraces we see today.

Research indicates that sedimentation has been ongoing in Pamukkale for at least several hundred thousand years. The structure of the travertines is closely related not only to the chemistry of the water but also to the fault lines and fracture systems in the region. Hot springs emerge from these faults, explaining why the travertines in Pamukkale are arranged along a regular line.

Recent isotope measurements reveal that the water forming the travertines is largely rain-borne. This suggests that the travertines are a natural archive containing information about climate change and environmental conditions. Furthermore, studies from 2024 emphasize that the Pamukkale travertines are considered internationally significant not only as a natural formation but also as a geological heritage site.

The white terraces you will see during your visit to Pamukkale are, on the one hand, the result of active geological processes, and on the other hand, part of a historical landscape intertwined with the ancient city of Hierapolis. In short, Pamukkale is a unique laboratory in terms of both nature and history.

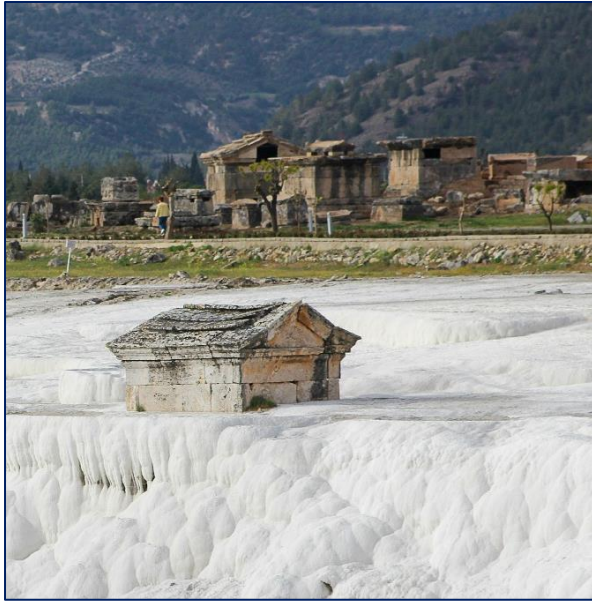
Literature:

Stable isotope geochemical study of Pamukkale travertines

🔗 <https://doi.org/10.1016/j.sedgeo.2011.04.015>

Denizli Travertine: A Global Heritage Stone Resource Nominee

🔗 <https://link.springer.com/article/10.1007/s12371-024-00970-w>



Hierapolis: A Sacred and Monumental City Shaped by Geomorphology

Hierapolis is one of the rare ancient cities where both natural geological processes and the cultural heritage of antiquity are intertwined. The city is situated on a plateau shaped by active fault lines, directly above the Pamukkale travertine terraces. This geological location provided the city with both healing hot springs and travertine stones used as building materials.

The city's founding dates back to the 2nd century BC, during the Kingdom of Pergamon. Over time, it became a major health, religious, and cultural center during the Roman and Byzantine periods. Frequently shaken by earthquakes, the city was both renewed and expanded; this cycle makes Hierapolis both a geomorphological laboratory and a multi-layered historical stage.

Academic studies (see Galadini & Marotta 2000; Bianchi et al. 2019) show that travertine is not only a natural formation but also an important architectural building block of the city. A significant portion of the ancient baths, streets, nymphaeums, theater, and tomb structures were built with travertine and regional marble. Archaeometric studies reveal that most of the stone used came from local quarries around the city, indicating that Hierapolis was a city that systematically utilized its own natural resources.

Elements defining Hierapolis' cultural identity include the Ancient Baths Complex, located right next to the travertine fields, the Roman Theater, the Plutonium (gate of the dead), and the extensive necropolis on the road to Laodicea. Due to its sacred water sources, the city became one of the pilgrimage centers of the ancient world; during the Roman period, thousands of people flocked to the city in the hope of healing.

Hierapolis, with its multifaceted character—which is the reason for its UNESCO World Heritage status—is both a living testament to geological processes and a monumental representative of the ancient world's health, cultural, and architectural heritage.

Literature:

Galadini & Marotta (2000) Creation and destruction of travertine monumental stone by earthquake faulting at Hierapolis, Turkey

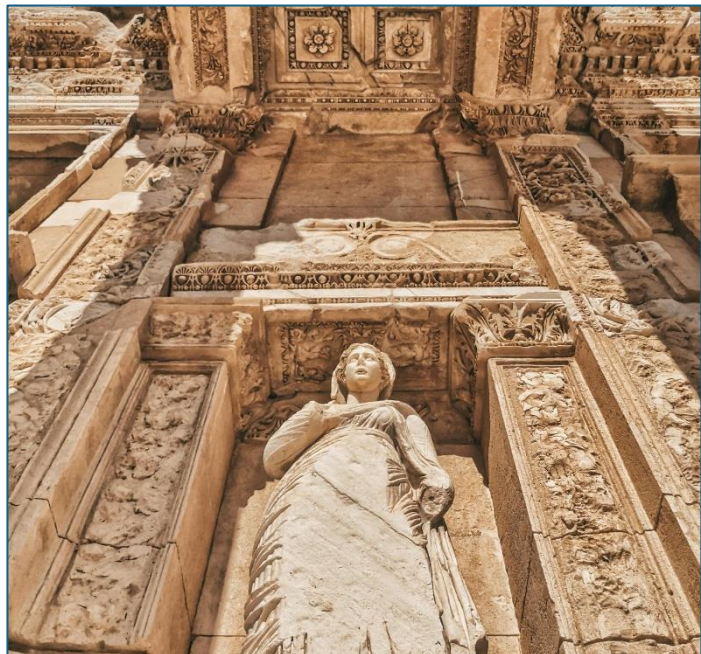
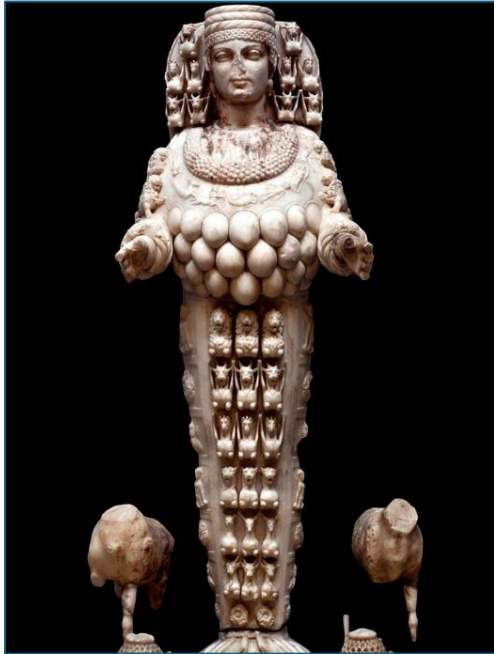
🔗 <https://doi.org/10.1144/gsl.sp.2000.171.01.02>

Bianchi et al. (2019) The Provenance of Marbles and Alabasters Used in the Monuments of Hierapolis in Phrygia

🔗 <https://www.mdpi.com/2571-9408/2/1/35>

Day 2: August 19

- After breakfast at the hotel, we will travel for approximately 3 hours to the ancient city of Ephesus in İzmir.
- We will visit Ephesus, Şirince, and Kuşadası.
- Dinner and Overnight Stay: Signature Hotel



Ephesus: A Cultural, Commercial, and Geomorphological Crossroads

Ephesus is an ancient port city situated on the edge of the alluvial plain of the Küçük Menderes Basin, strategically located to combine fertile agricultural lands with access to the sea. The city's geomorphological fate was determined by the alluvium carried by the Büyük Menderes River: Once a seaport in antiquity, Ephesus gradually became inland as the coastline silted up, directly impacting its economic role and historical development.

From the 1st millennium BC onwards, Ephesus was one of the important centers of Ionian civilization. During the Roman period, it became the capital of the Asia Province and distinguished itself with its magnificent structures, largely built of marble. Monuments such as the Temple of Artemis, the Library of Celsus, the Temple of Hadrian, and the Marble Street reflect the city's religious, administrative, and commercial importance.

Archaeometric research indicates that the marble used in Ephesus's structures was largely sourced from Marmara Island, Dokimeion, and local quarries. The city's architecture is based both on its rich marble trade and presents one of the most advanced examples of Roman-era urban planning.

Today, Ephesus is a unique archaeological landscape reflecting both the transformation of ancient port cities and the cultural diversity of Anatolia, thanks to its geomorphology shaped by the changing coastline and its multi-layered historical accumulation.

Literature:

Kayan (1988) The geomorphological evolution of the deltaic coast near ancient Ephesus

🔗 <https://doi.org/10.1002/gea.20151>

Attanasio et al. (2009) Quarries in the region of Aphrodisias: the black and white marbles of Göktepe (Muğla)

🔗 <https://doi.org/10.1016/j.jas.2005.10.015>

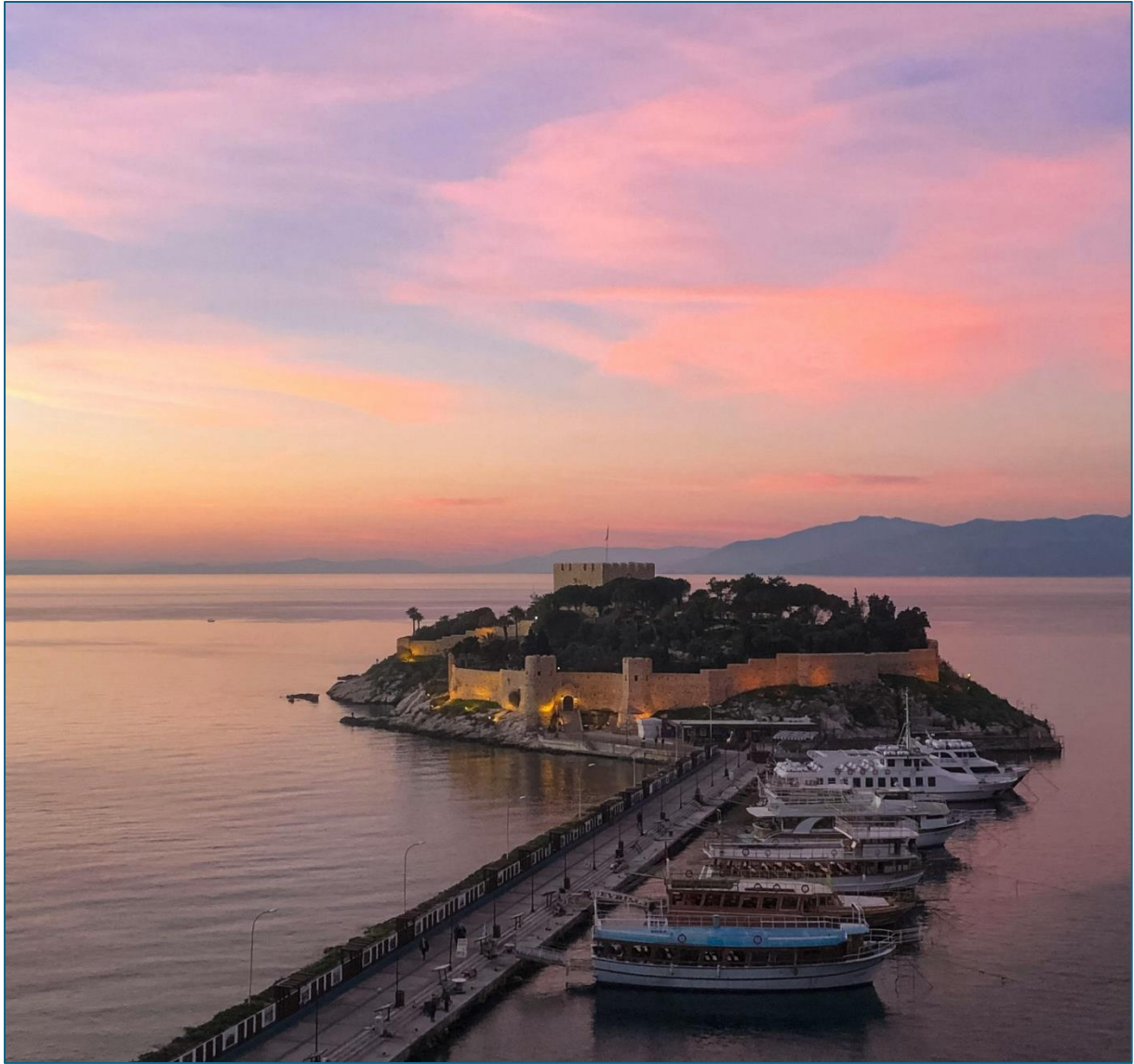


Şirince: A Mountain Village Heritage Shaped by Geomorphological Location

Şirince is an old Greek settlement built on a sloping topography at the foot of the Aydın Mountains. The village's characteristic two-story stone-and-wood houses are prime examples of traditional construction techniques using the region's local limestone and wood resources. Thanks to its location on the mountain slopes, the village has developed a settlement plan resilient to natural disasters and has gained an architectural identity in harmony with the landscape.

A Greek town where trade and agriculture flourished in the 19th century, Şirince was particularly known for its vineyards and olive groves; thanks to its microclimate, fruit farming and wine production became the region's main economic activities. After the population exchange, a Turkish population settled, but the old Greek residential fabric has been largely preserved. Therefore, Şirince today reflects both the rural architecture of the Aegean and its multicultural history.

The geological structure of the valley where the village is located provides fertile soil and natural water resources; The terraced agricultural areas shaped by the sloping terrain have enabled Şirince to maintain its centuries-old agricultural tradition. In this respect, Şirince boasts both a settlement plan in harmony with the natural landscape and a preserved example of the historical village culture of the Aegean.



Kuşadası: A Multilayered Historical Scene from a Port City

The historical roots of Kuşadası extend back thousands of years to the earliest settlements in Anatolia, and the region has maintained its connection with maritime trade since antiquity. Anaia/Kadikalesi, one of the ancient settlements on the Aegean coast, was an important port and shipyard center during the Late Byzantine period; this role attracted the attention of maritime powers such as Genoa and Venice. The historical topography and port infrastructure of the region reveal Kuşadası's strategic position within the Mediterranean trade networks.

During the Ottoman period, Kuşadası became an important part of economic life as a developing port city in the 16th and 17th centuries. During this period, there was a need for a sheltered port to transport products such as olive oil, soap, dried fruit, and grain, and Kuşadası's ability to meet this need increased the city's commercial potential. Thus, a vibrant port city identity serving Aegean trade emerged.

Throughout history, Kuşadası has been influenced by numerous cultures, including Persian, Roman, Byzantine, Genoese, and Ottoman; its proximity to major sea routes has made it an important settlement both commercially and militarily. Today, this rich history is presented to visitors through historical central elements such as Kadikalesi, Güvercinli Ada Castle, old harbor structures, and Ottoman-era artifacts.

Day 3: August 20

- After breakfast at the hotel in Kuşadası, we will visit Alaçatı and Çeşme.
- After lunch in Çeşme, we will begin our return journey, which will take approximately 9 hours.
- Arrival in Istanbul, likely at 23:00.



Included Services

2 nights hotel accommodation

2 nights dinner at the hotel

2 breakfasts at the hotel

English speaking guide

Transportation by bus, etc.

Professional liability insurance

Services Not Included

Museum and archaeological site
entrance fees

Lunch

Tips

Personal expenses

Price: 370 Euro per person in a double
room.