

My lecture series and visit to Tsinghua University, Beijing, China

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1. Purpose of the trip and topic of the lecture series

Prof. Yu-Qing Lou of the Physics Department and Space Science Institute of Tsinghua University, Beijing invited me to give a lecture series in English on the topic "Life in the Universe" which largely follows my recent textbook on the subject. These lectures discuss a wide range of topics: The formation and evolution of the universe, of galaxies, stars and planets, the formation of the Earth, plate tectonics and the creation of continents, the beginning and evolution of life, why and how humans formed, the search for extraterrestrial planets, the quest for extraterrestrial life, the possible future development of humans and finally questions about the nature of extraterrestrials and why they have not yet been found.

After my arrival on April 13, 2006 the lectures started on the 17th and consisted of 12 sessions of 180min each plus 3 discussion hours of similar length. They took place in a modern five storey classroom building (one of many on the extensive university campus) with three very spacious wings (A, B, C) connected with glass bridges. Each storey had about 20 spacious lecture rooms per wing that were equipped with the most modern equipment such as computer, LCD projector and retro-projector (to show printed pages) and had ample connections throughout the class room for internet access.



Sixth Classroom Building, Wing A



Classroom 6A405



Classroom 6A405 holding 80 people



Northern dining hall

The roughly 30 students, half of them female, were apparently all equipped with laptop computers on which they usually worked up to the time when the class started. For my talk I only needed to bring a USB-stick and after a few clicks was able to start my power point presentation. The students were very interested and particularly after class asked many questions which typically occupied me for another half hour or more. We also had discussions over the internet. Outside the lecture rooms broad pathways extended to a railing that delineated a naturally lit interior court in which one could look all the way down to the ground floor.

Some distance away another building housed one of several campus dining halls that offered large numbers of different dishes on display, three times a day seven days of the week. As unfortunately I do not speak or read Chinese, this fact was particularly helpful as it allowed me to select food by sight. The inability to speak the native language was the only difficulty that I encountered in Beijing and it became particularly evident in restaurants and shops. Luckily most students understood English quite well although some had difficulties with the pronunciation.

In addition to my lectures I gave talks entitled "Intelligent Life in the Universe. Myth or Reality" at the Physics colloquium of Tsinghua University, the Astronomy Department of Beijing Normal University, the Physics Department of the Chinese National Academy of Sciences, and at Peking University. Each time these talks were followed by extended discussions and an exquisite lunch or dinner. Another fine result of my visit at Tsinghua University was that on campus I met several famous visitors such as John Lewis from the Lunar and Planetary Laboratory, Tucson AZ who advises the Chinese Government on space exploration, Chia-Chiao (C.C.) Lin from MIT, the discoverer of the density wave theory of galactic spiral arms and Nobel Prize winning physicist Masatoshi Koshiha from the University of Tokyo who gave a talk on Neutrino Astrophysics.

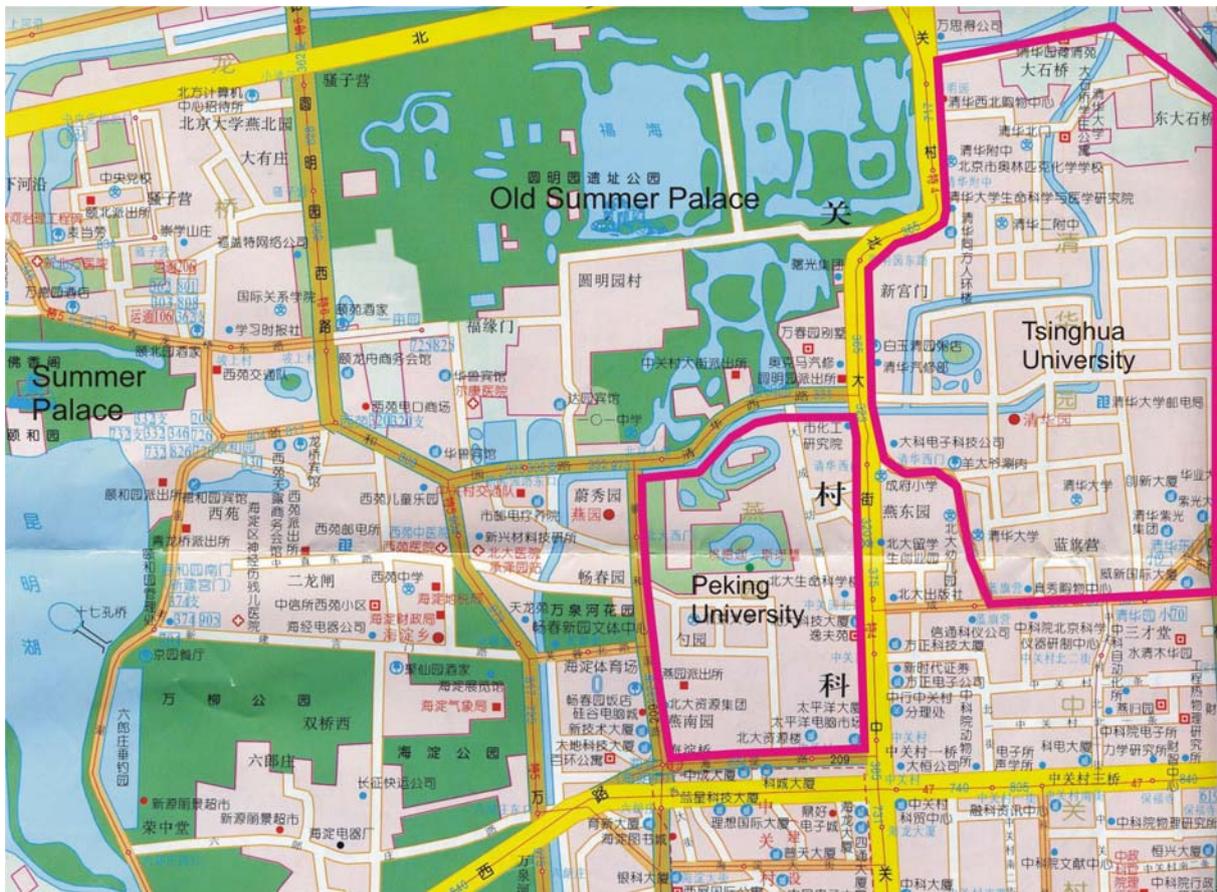
2. Housing



Southwest Apartment Building 9, Unit 1, Flat Nr 202

As lecturer I was housed in a spacious and well furnished 3 room university guest apartment. To activate the outside telephone and internet connections, smart cards and an internet access card for a DSL connection could be bought at the university telephone office.

3. The Tsinghua University Campus



Map of north-west Beijing

On the map of north-west Beijing the adjacent campuses of Tsinghua and Peking Universities are marked red. The campuses are located near the Old Summer Palace and the Summer Palace because once that land also belonged to a former royal garden of the Qing Dynasty. This imperial history explains why both campuses have beautiful artificial lakes and islands and are crossed by man-made canals.



Music School near one of the canals



Water lilies in the central lake

Established in 1911, Tsinghua University, which recently has formed a close partnership with Heidelberg University, started as a multidisciplinary polytechnic school concentrating on engineering but over time has become a foremost comprehensive university by branching out into fields such as philosophy, economics, law, education, literature, history, science and management.



The campus has artificial lakes and an island that can be reached via picturesque bridges.



The roads crossing the campus are alleys with long rows of old trees on both sides that provide shade from the intense sun. Before and after class these roads are filled by large numbers of students on bicycles.



Benches and a statue of Confucius as well as small pavillions invite for contemplation and discussion.

The campus of Tsinghua University extends over roughly 15 km² and has a large number of institutes, laboratories, administration buildings as well as housing complexes for faculty, employees and students. The Main lecture hall has class rooms so large that they can be used for conferences. The Physics and Mathematics Departments with extensive wings surround an extensive outdoor court that could be used for special performances or social events. A great number of very recent buildings house new fields such as Nanotechnology or Medical research.



The Main lecture hall



Physics Department



The Stadium and the Main assembly hall are landmarks of Tsinghua University



Tsinghua Science Park (left rear) with adjacent new construction and remodelling



Highly visible all over the campus, because of its four massive high-rise office towers and the impressive architecture, is the Tsinghua Science Park, which houses off-shoot companies and industrial collaborations. Everywhere on campus new construction is in progress and new landscaping and gardening is going on.

4. Beijing and surroundings

During my stay which ended on May 28, 2006 I have also visited a large number of historical monuments within the Beijing city limits such as the Forbidden City, the Temple of Heaven, the Lama Monastery, the Confucius temple, the Prince Gong Palace, the Summer and Old Summer Palaces, the Fragrant Hill Park with the Azure Blue Cloud temple, the Botanical Garden with the temple of the Reclining Buddha, the Bell Museum and City Museum, the Drum Tower and sites such as the Tienamen Square and the Dashalan Street. I was very impressed to read about the long history of Beijing and see the beauty of its cultural remains despite of several infamous destructions caused by western troops in the 19th century.



Model of the moat-enclosed Forbidden City. The model shows the Forbidden City from the south and is displayed in the City museum. The Beihai Park is the upper lake in the left background.



Forbidden City with impressive temples where the emperors received their visitors



Restoration of Buildings in the Forbidden City



Palace Museum Treasures



Prince Gong Palace



Drum Tower



Confucius Temple, steles

The Confucius temple houses a large collection of stone steles with engravings of his works and from where over the centuries paper rubbings had been made by the students of the attached school



Lama Monastery with worshippers burning incense sticks



Heaven Temple, Hall of the celestial sphere Heaven Temple, Incense burners
Here the Emperors prayed for good harvests and could get deposed if those did not come.



Old Summer Palace, Mace and ruins of European palaces.

The Old Summer Palace an imperial park built in 1747-1760 had a large number of lakes and islands connected with bridges and even European palaces in the Rococo style together with a maze. Unfortunately this park was destroyed by the Europeans in 1860. Today only part of the extensive park can be visited.

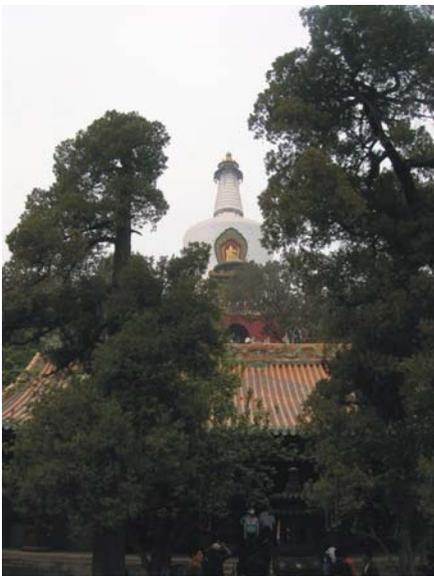


Summer Palace, Theatre

The Summer Palace that suffered the same sad fate has been restored in the late 19th century as summer residence for the Qing emperors.



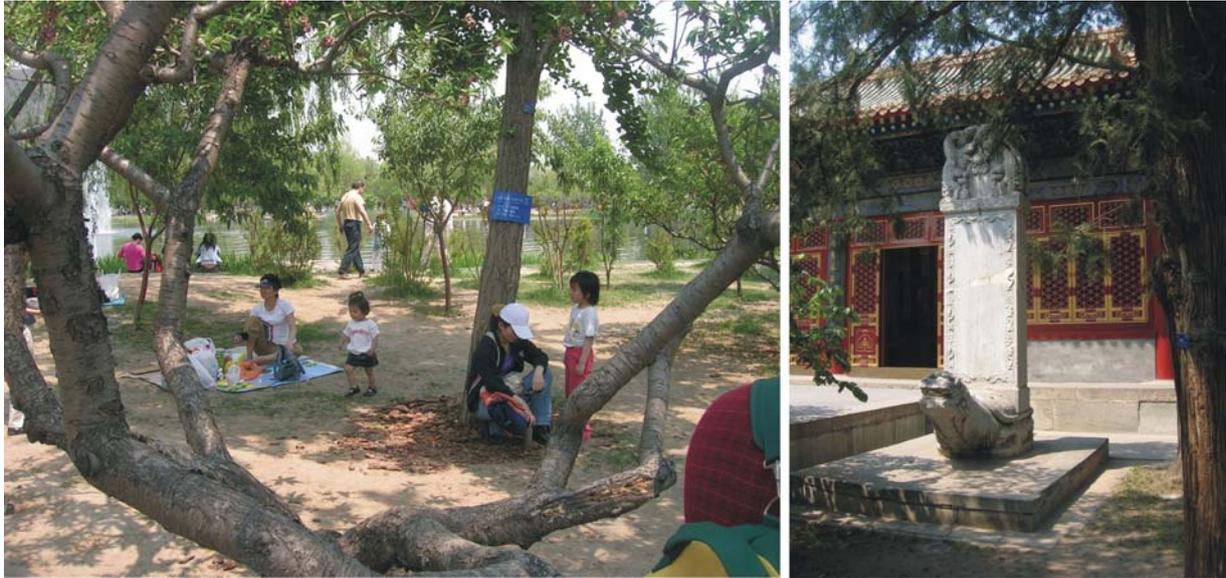
Summer Palace, Suzhou-market street



Beihai Park to the northwest of the Forbidden City consists of a vast lake with an island on which the white Dagoba, a funeral monument for a Tibetan monk provides an impressive landmark. From this island one can take a boat ride to the northwestern part of the lake



Beihai Park: Nine Dragon Wall and a young flower beauty impress the visitors.



Botanical Garden, Stele on a turtle in front of the Temple of the Reclining Buddha. The Botanical Garden is a place where families go to picnic and stroll among the extensive flower beds and forests. The more historically minded can also visit the Temple of the Reclining Buddha.



The newly restored **Bell Museum** shows historical bells and a whole bell organ that was as a burial gift found in the grave of the Marquis of Zeng from the period of the Warring States 475-221 BC.

Excursions

I undertook two excursions outside the city limits. A bus excursion north-west of Beijing organized by the Chinese Travel Agency CITS brought me to the **Great Wall at Badaling and the Ming Tombs**. Naturally this also included the sales outlets of the local jade industry where gigantic pieces of art were displayed and waited to be bought and transported to Europe or America. Here the visitors were put into buying mood by a sumptuous multiple-dish lunch and good Tsingtao beer after which the Americans on the table started to incant: "Great wall, shopping mall....".



Ming Tomb treasures



Jade factory exhibit



Great Wall at Badaling



Another 340 km round trip mostly on country roads and through numerous cities north-east of Beijing using a taxi provided by CITS with a driver and a guide took me to the large 45 km² complex of the **Eastern Qing tombs** with their subterranean vaults.



Qing Tombs: Processional road



Memorial temple



Qing Tombs Incense containers



Grave entrance

In front of the temple that contained the subterranean vault a collection of incense urns delineated the inner sanctuary. Inside a steeply inclined ramp led down to the ice cold burial chamber. This had been closed by very heavy stone doors that originally were locked from the inside by inclined stone trusses.



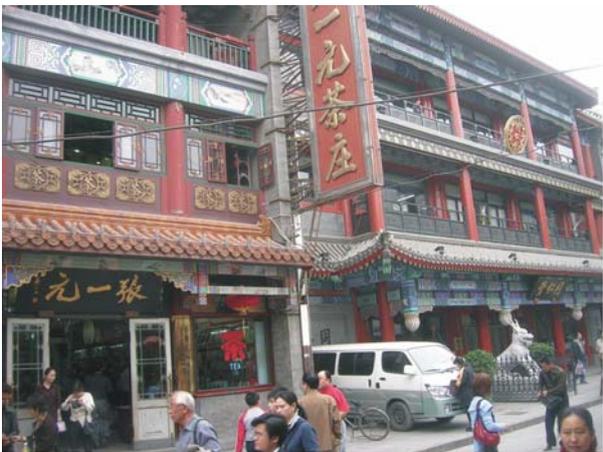
Qing Tombs: Grave of the emperor widow Cixi

The city

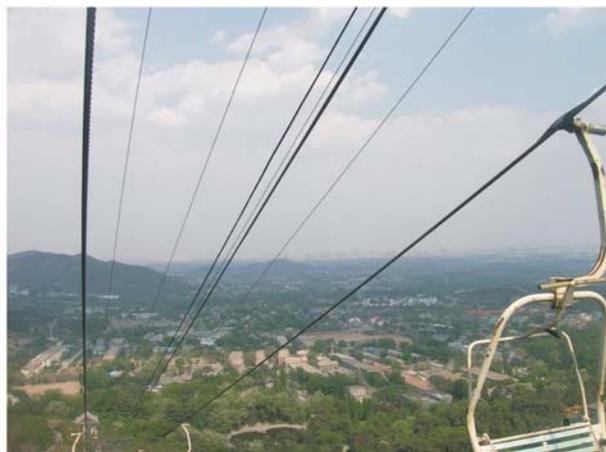
In addition to the ancient and historical sites, it is also the present day Beijing itself with its 20 million inhabitants, its huge number of old and modern superbly designed high-rise buildings, its new parks and huge shopping centers that are very impressive. I was overwhelmed by unexpectedly seeing so many VW and Audi cars everywhere, by being able to buy DVD films of old classics of the 1950s and 60s for 1€ a piece, to see ginseng roots for 42 000 € on sale in the most famous pharmacy of East Asia and to be offered the most exotic food such as still alive scorpions and sea horses on sticks, to notice McDonald restaurants everywhere and to ride on a cable lift 500 m up to the highest mountain near Beijing.



Beijing high-rise buildings and VW cars



Dashalan Street, most famous pharmacy in East Asia



Cable Lift at Fragrant Hill Park



Downtown shopping center



Live Scorpions and Sea horses