On September 1st 2011, 24 master students, six committee members, and two faculty members stood ready to depart on a journey of a lifetime. Over the following month the Study Tour ‘Orient’ participants travelled to Hong Kong, Shanghai, Beijing, Busan, Sacheon, Daejeon, and Seoul, visiting a variety of interesting Aerospace companies and undertaking numerous cultural activities.

ORIENTATION
It all began in the summer of 2010 when the organizing committee decided that the destination of the Study Tour 2011 would be China and Japan. However, after months of organization, our plan was somewhat thrown into disarray by the devastation left behind by the tsunami and the nuclear disaster in Japan. After a month of discussion and research, it was decided that the Japan section of the tour would be cancelled and replaced by a visit to South Korea.

Thus, after more than a year of hard work, on September 1st 2011 the Study Tour ‘Orient’ participants were packed and ready to go.

HONG KONG
After a long flight to Hong Kong and a good night’s rest, the group was ready for the first company visit of the Study Tour: HAECO. Hong Kong Aircraft Engineering Co. Ltd. is one of the largest maintenance companies in East Asia. The company is strategically located at Hong Kong International Airport, where it is capable of providing its customers with maintenance ranging from small repairs to complete overhauls, painting, and so on. HAECO’s hangars are among the largest in the world, capable of holding several Boeing 747 simultaneously. After a presentation on the company structure, one of the engineers showed us the entire facility, including the mobile extension hangar.

The second company visit in Hong Kong was to Hong Kong Air Cargo Terminals Ltd. (HACTL), which is also located at Hong Kong International Airport. HACTL is one of the largest air cargo terminals in the world, and functions as the air cargo hub of south-east Asia. HACTL also has one of the largest automated storage systems in the world, capable of storing thousands of items. To improve security, the items are stored in random locations only known to the computer system.

In between the company visits, the rich culture of Hong Kong could not be ignored. Among others, the group visited well known tourist attractions such as the Temple Street Market, the Victoria Peak and the Giant Buddha. One of the particularly impressive cultural activities was a cruise over the waters of the bay of Hong Kong. The boat gave the group an excellent view of the city’s famous light show. On the 6th of September the group embarked on the night train to Shanghai.

SHANGHAI
In Shanghai the group visited the Shanghai Synchrotron Radiation Facility (SSRF). SSRF is China’s largest scientific project, supported by the Chinese Academy of Sciences and the city of Shanghai. The facility is capable of simultaneously accommodating up to one hundred different experimental stations. With the capability of increasing the energy of electrons to 3.5 GeV, SSRF is one of the most potent particle accelerators in the world.

A visit to General Motors gave the students insight into the highly automated process of producing automobiles. An impressive forty cars per day are produced at the Shanghai General Motors plant. The visit to the General Electric China
Technology Centre proved surprising in the sense that whereas the students knew the company for its jet engines, they now discovered that GE plays a major role in many industrial fields. GE proved to have an especially large energy production section that invests in the development of sustainable energy production methods. As aerospace engineering students, the group was most interested in the turbofan engine that GE develops for China’s first regional jet airliner: the ARU21, of which the group was to see more during the company visit to Shanghai Aircraft Manufacturing Company (SAMC). At this company, the students observed what was said to be the first production aircraft of the ARU21 in its assembly process.

In between the company visits the students had a chance to experience some aspects of the cultural side of Shanghai, with visits to the Shanghai museum of Waitan, the Yuyuan garden and bazaar, the Bund and the Jade Buddha Temple to name but a few. The Oriental Pearl Tower gave the group an impressive view over the city. The five days the group spent in Shanghai was hardly enough to explore this great city to the fullest, but many interesting company visits were planned in the following days in Beijing, a ten hour night train ride away.

BEIJING
The Airbus Engineering Centre in Beijing was the first company that was visited in Beijing. This visit was particularly interesting because of the European engineer who received the group there. From his own experience he gave the students detailed insights into the opportunities and difficulties of cooperation between the western world and China. The visit to the Beijing Engineering Centre also functioned as a lead-up to the visit of the Airbus facility in Tianjin. The Chinese assembly line of the Airbus A319 and A320 was located here. The visits to the two different sites of Airbus provided the students with an understanding of the working relations of Europe’s largest aircraft manufacturer with China, and the opportunities that lie in one of the world’s largest and fastest growing economies.

The visit to Chinese Academy of Space Technology (CAST) was the next company visit of the programme, providing the first truly space-oriented visit of the study tour. During this visit the students gained quite some insight into the current state of affairs of the Chinese space industry. One of the most impressive cultural visits in China was to the Chinese Aviation Museum; a large open air museum with a large collection of historic Chinese and Russian aircraft and helicopters. The next company visit was to the China Centre for Resources Satellite Data and Application (CRESDA) where we were led into an ultra-modern conference room for a presentation about the various applications of satellite data. CRESDA provides satellite data for a wide variety of applications such as meteorology, disaster monitoring, geological research and many more.

On the 17th of September the students visited the Beijing University of Aeronautics and Astronautics (BUAA), where an entire day programme had been arranged. The programme focused on the space-related projects of both the BUAA and TU Delft. Dr. Chu, one of the professors accompanying the Study Tour and Jeroen Röhrner, one of the participants, gave presentations about the TU Delft and the research and projects taking place at the Aerospace Engineering faculty. The BUAA students and professors also showed the group some of their research laboratories and facilities. The University visit was concluded by a discussion regarding the future cooperation between the TU Delft and BUAA.

Since Beijing has a very rich cultural heritage, plenty of time was devoted to exploring the historical tourist attractions of this great city. The cultural programme consisted of visits to the Olympic Village and the famous ‘Bird’s Nest’ stadium, the Tiananmen Square, the Imperial Summer Palace and the Forbidden City. One of the most impressive cultural visits however was to the Great Wall just outside Beijing, where a two-hour climb brought some astonishing views of the surrounding area. This visit also marked the end of the China part of the study tour.

SOUTH KOREA
A short flight took the group to Busan, which served as a short stop-over before the group continued to Changwon to visit Samsung Techwin. Samsung Techwin is part of South Korea’s most power-
ful industrial conglomerate: the Samsung Group. The Samsung Techwin plant visited produces and tests (turbine) engines for a wide variety of applications ranging from the American F15 jet to missiles. The students received a fascinating tour of the Samsung Techwin engine testing and construction facilities.

The following day the company visit to Korea Aerospace Industries (KAI) took place. KAI is South Korea’s largest aircraft manufacturer. The main focus here was on the production of the T50 trainer/attack aircraft and the development of the Surion helicopter. The visit to KAI turned out to be one of the most impressive and exciting visits of the tour. The group was welcomed with an introduction presentation and then guided through the assembly line of the T-50 and the F-15 fighter jets. Additionally, we got to see a T-50 test plane up-close and the group was saluted by a brand new Surion Helicopter’s flyover.

After the visit to KAI, the group travelled to Deajeon to visit Korea Advanced Institute of Science and Technology (KAIST) the next day. KAIST opened with a presentation on the research going on at the university, followed by a tour to the multiple aerospace-related laboratories present. Korea Aerospace Research Institute (KARI) was the objective of the next company visit. KARI plays an instrumental role in the Korean space program and as such possesses several large clean rooms for the construction of satellites. At KARI the group received a presentation on the KARI capabilities and was greeted by the first Korean astronaut: Yi So-yeon. After the presentation the group was shown the satellite testing facilities, the ground station, and the ready-to-launch satellite KOMPSAT 5.

On the eve of the 23rd of September the group arrived at the final destination: Seoul. The following days were largely dedicated to cultural activities. The first and most notable of these was the visit to the Demilitarized zone (DMZ) between North and South Korea. Overall, it was an impressive and educational day as the group was led by an American soldier to the North Korean border. The students were allowed to spend a few minutes on North Korean territory inside the conference room where negotiations between the North and South take place. There, the group experienced the ongoing tension between North and South Korea.

The following day presented more cultural activities with a visit to the Korean War Museum and the Gyeongbokgung palace. After two days of cultural activities it was time for another company visit to the Korean Aerospace University (KAU), which is unique because he engineering and flight schools are contained within the same university complex. The university is even a partial owner of an aircop next to the campus. In the afternoon, a tour of the Incheon International Airport baggage handling area was scheduled. As Incheon airport is rated one of the world’s best airports, a visit to one of the most advanced baggage handling systems in the world proved a valuable addition to the tour.

The last day in Seoul was spent at leisure until it was time to end the Study Tour with an information session at Nuffic-Neso, a Dutch education support office. At Nuffic-Neso, they were able to clarify many aspects of the South Korean culture, including the educational culture. The last Study Tour dinner was spent with the entire group together in a traditional Korean restaurant.

ORIENTAL GREETINGS
The organizing committee would like to give a special thanks to all the Study Tour participants, dr. Chu, Coen Vermeeren, Prof. Eitelberg, and Ms. Li Leping.