# STARS '05

Study Tour into Asian Research and Science • Final Report

# Colophon

This is a publication of the Foundation Grote Buitenlandse Excursie(s) Fysisch Mathematische Faculteitsvereniging (Foundation GBE-FMF), best to be translated as Foundation for International Student Excursions. The foundation is founded by the Fysisch-Mathematische Faculteitsvereniging (FMF), the organization for students in (applied) physics, mathematics, computer science, biomedical engineering and astronomy of the University of Groningen.

Its goal is to organise intercontinental study tours for students of the FMF every two years. The foundation consists of a board and a committee. The board acts as a supervisor while the committee is involved in the actual organisation.

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# Final Report

## Foundation GBE-FMF

## Dutch study tour to China and Malaysia 2005

# Preface

STARS '05, Study Tour into Asian Research and Science 2005, was a study tour to Beijing (China) and Kuala Lumpur (Malaysia) from April 14th till May 8th 2005. This study tour was organised by the committee STARS '05, part of the Foundation Grote Buitenlandse Excursie(s)-Fysisch Mathematische Faculteitsvereniging (GBE-FMF). The committee STARS '05 is proud to present the Final Report of the tour which you are reading right now.

The Foundation GBE-FMF is tightly linked to the Fysisch-Mathematische Faculteitsvereniging (FMF). The FMF is a student association for students in Computer Science, Mathematics, (Applied) Physics, Biomedical Technology, and Astronomy at the University of Groningen. The association organises a lot of activities that contribute to the students' scientific education, such as symposia, excursions to companies and the like. Furthermore, the association also has committees organising all kinds of social activities, such as parties and sports activities. The association has over 600 members, and for that reason it is the most important beta association of the University of Groningen.

The Foundation GBE-FMF pursues an educational objective. The Foundation's objective is to organise a three-week study tour with both scientific and cultural aspects to a destination outside of Europe, for members of the FMF. In past years, the Foundation organised study tours to Thailand and Singapore (committee EAST '96), Japan (committee Nippon '01) and the United States of America and Mexico (committee ManeaX '03).

This Final Report will introduce the participants of the tour. Twenty students, two members of the scientific staff and five committee members all experienced a three-week action packed program, in which we got aquainted with the (scientific) culture of both countries. To this end, several universities, institutes and companies were visited, as well as numerous cultural sights. A tour like this needs a lot of preparation. What was needed to be done for STARS '05 can be read in the Preparations section.

The main source of funding for STARS '05 were the case studies. A case study is a research assignment for a company or institution, performed by two participating students. Reports of the case studies are found in this report. A large part of the report is reserved for travel reports, in wich the participants talk about the official and non-official activitities done during the tour.

During STARS '05, we got help from several local people in Beijing and Kuala Lumpur. Their view on the tour and the participants is to be found in the 'View of the other side' section. Next are the reports from the board of the Foundation GBE-FMF, the two members of the scientific staff Ms. Ena Tiesinga and Mr. Coen Groen and the personal experience on organising STARS '05 from the members of the committee. The report will conclude with some words of gratitude, to all people who made STARS '05 to what it has become: a fantastic study tour wich surpassed all expectations.

I hope you will enjoy reading this final report and you get a good impression of the study tour and the work involved in making it happen.

Rogier Falkena
Chairman STARS '05

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# Preparations

In order to survive our trip, and to make sure everyone was well-prepared for the adventures ahead, we organised a couple of participants meetings. For the first meeting, held in November 2004, two speakers were invited to talk about their experiences in China and Malaysia. Professor Knoester gave a talk about the Chinese culture and the educational system in particular. He emphasised the huge differences between China and the Netherlands in terms of competitiveness and educational opportunities. In China, getting a higher education is a great privilige, and cannot be taken for granted. It is very important for Chinese students to perform well, as a ranking is made for each class. Being the `number one' of your class in highschool automatically means having a better chance of getting into a prestigious university.

Jan-Willem de Smeth, an Economics student at the Rijksuniversiteit Groningen, who did a study project in Kuala Lumpur for a couple of months, told us about his experiences and gave his impression of the Malaysian culture. He told us some hilarious anecdotes about the Malay's love of air-conditioning, the multi-cultural society and the nightlife of downtown KL.

The second meeting the committee invited Zhang Han, who grew up in Beijing and studied in Groningen, to help the group to master their Mandarin. She tried to teach us some basic expressions, such as how to count to ten, how to introduce yourself and how to explain you're not too fond of dog meat. To our disappointment, learning Mandarin was a lot harder than it seemed, and despite Han's efforts, we forgot most of our new vocabulaire already after half an hour. Luckily, Han wrote down the most important words and sentences. After this lecture on the Chinese language, we got to practice our chopstick-skills by eating peanuts.

The third meeting was held at Anna's. We were treated to a great example of modern Chinese cinema: "Hero". Watching this movie nurtured our enthousiasm of visiting such an exciting and rich place.

The last meeting was held in March 2005. During this meeting, we presented the final program (which later on proved not to be final after all). We also discussed details on requisites, and other important last-minute information was given. The meetings were also a good opportunity for the committee to keep everyone up-to-date on current affairs such as progress and recruitment of case studies. Developments of the scientific and cultural programs were discussed with the group as well. After each meeting, we had a drink in a nearby pub. This was an excellent opportunity for the group members to get to know each other a little better.

The participant meetings were a nice way to get to know each other a bit before going on a trip like this. Furthermore, they made everybody feel very enthousiastic about our trip. Just two weeks later, the study tour would finally start. ◀

# Case Reports

The most important source of funding for the GBE-FMF study tours comes from case studies. Apart from subsidies and the participants' contributions, every participant has to do a case study. A case study is a project for a company or institute. The participants spent three weeks working on such a project, and by doing so they earn money for the foundation. The organising committee selects the most competent participants for each assignment. Since they have an academic training, the students can apply the knowledge of their particular field of expertise to practical situations or problems. During the case study, they are at all times supervised by a member of the scientific staff of the university, who can advise the students on problems they encounter. The staff member also makes sure the students meet the quality demands put forward by the company or institute.

A case study is a good opportunity for a student to come in close contact with companies that are potential employers, and it gives the companies the chance to introduce themselves to the students. Besides that, companies can get work done for which they lack expertise or time, at a cost that is far below the industry standard. The students have access to university equipment, literature and expertise to best help them fulfil their assignment.

For STARS '05, case studies were performed for eight different companies and institutes:

- Océ
- Universitair Onderwijs Centrum Groningen (UOCG)
- Universitair Medisch Centrum Groningen (UMCG)
- RuG University Library (UB)
- ProGamma Foundation
- Nederlandse Aardolie Maatschappij (NAM)
- XPAR Vision
- SKF

You will find reports of each study in the following section.

## Case report UOCG I

*By Laurens van der Starre & Ilja Plutschouw.*

**Support the transition to, and inventorise the new ICT infrastructure of the UOCG.**

The UOCG ("Universitair Onderwijs Centrum Groningen" or "Academic Education Centre Groningen") is an institute that concentrates on educating teachers, innovating education and improving and guarding the quality of education as a whole. It's a centre of expertise and knowledge on the subject of education. The UOCG also deploys, supports and develops educational software ("electronic learning environments"), used at universities and highschools.

The UOCG is a new institute, being the result of a merger of three different academic institutes: the ECCOO, UCLO and COWOG. These three institutes all had their roots in the field of education, electronic learning and innovation. With the merger, the three former institutes moved to one location. A new infrastructure was built to accommodate all the needs of the UOCG.

Because the UOCG is a merger of three institutes, all the differtent electronic mail, agenda and fileserver services had to be facilitated by one central system. The employees used different mail clients, different mail protocols and different mail servers. The goal was to inventorise the software and systems needed and used by the individual employees, migrate the "old way" of sending and receiving email to the "new" university-wide central system, centralise the agenda system and connect every workstation to the central Novell application server. We were mainly involved in the mail migration and software and systems inventorisation.

The mail migration proved somewhat difficult. The idea was to migrate the locally stored mail to mail stored at the IMAP server. In the case mail was already stored at an IMAP server, an IMAP-to-IMAP conversion had to take place. Migration tests brought up a lot of unexpected troubles (e.g. the migration tool used to migrate the locally stored mail showed incompatibilities with the locally stored mail folders, the IMAP-to-IMAP tool showed problems with IMAP-folders, etc.). After all problems were sorted out, and the central mail servers proved stable, the employees' mail were migrated and software and system needs were stored in a database system.

The second part of the case consisted of an evaluation of the new ICT infrastructure of the UOCG. With the transition to centralised servers and a new ICT infrastructure, questions arose whether this is what the UOCG really needed, and what was missing to facilitate the employees. We interviewed project leaders to find out what their needs were. Furthermore we asked them and other employees about what they missed in the ICT infrastructure or expected to get. Next, the ICT infrastructure was analysed for inconsistencies and expectations.

The results of this research were delivered in a written report. It will be used by the UOCG to assess their investment in the ICT infrastructure and see where new investments are needed. The report is for internal use only, so no conclusions and findings will be discussed here. ◀

## Case report UOCG II

*By Niels Maneschijn & Bastiaan Zijlema*

### Course administration

The UOCG (Universitair Onderwijscentrum Groningen) is part of the University of Groningen and it is involved in all aspects of education. It consists of the former UCLO, ECCOO and COWOG.
Its main activities are:

- training of teachers
- in-service training
- the development of supporting systems and support of monitoring examining and quality control

It organises workshops, training sessions, presentations and theme days. It also arranges internships for students who want to become a teacher.

*The Case*
The UOCG has a database system for keeping track of the participants in different courses. It also contains the organisations and schools where future teachers can do their internship. The database as well as the user interface is implemented in MS Access. Use of this system for a few years has uncovered the need for a number of extra fields and features, as well as a structural overhaul to differentiate between the different parts of organisations. Also, a billing system for course participants is needed.

*Implementation*
After consulting the different stakeholders we have altered the structure of the database and are now in the process of implementing the support for these changes in the user interface. Also, we have made some cosmetic changes, added a number of extra data fields, and implemented additional search methods.
To implement the possibility to divide organisations into different departments we had to make changes to the data model. A problem while designing the new data model was that we are building on an existing system. Because there is already a large amount of data in the database, we cannot change the data model too much. If we do change it, we'll have to transform the data into another form. This requires some thorough

thinking, but everything turned out to perform well.
Further research has to be done on the requirements for the billing system, before this can be implemented.

*Evaluation*
This case study was very interesting and entertaining to accomplish. We learned a lot, mainly about MS Access. Also the UOCG provides a pleasant and very open working environment. We think we really contributed to the working of the database system, and realised some major upgrades to the system. We hope that, after an initial testing phase, we can take the upgraded system in production soon. ◀

## Case Report UOCG III

*By Else Starkenburg & Thijs Hollink*

UOCG is an abbreviation of "Universitair Onderwijscentrum Groningen". This centre is the successor of the former "Expertise Centrum Computer Ondersteund Onderwijs" (ECCOO), "COWOG", and "Universitair Centrum voor de Lerarenopleiding" (UCLO). The main tasks of the UOCG are divided over five divisions, Teaching Education, Teaching and Professionalisation, Development of the Learning Environment, Organisation of Education and Evaluation and Quality Control. The first division, Teaching Education, offers courses for students who want to become teachers in secondary education. The second, Teaching and Professionalisation, offers courses for academic and secondary education teachers. The division Development of the Learning Environment, focuses on computer supported innovations in education and develops the Electronic Learning Environments "Nestor" and "Brainbox". Organisation of Education has developed several products for registration of student results, a course database and a room reservation system. Furthermore they assist teachers in improving their multiple-choice exams. The last division, Evaluations and Quality Assurance, assists the faculties of the University of Groningen and schools in secondary education with designing and implementing their quality assurance systems.

After the merge of the three organisations, already some progress has been made in the process of merging the bulk of information on the respective websites of the former UCLO, COWOG and ECCOO. The global outline was finished, but still final integration between the different parts was lacking. The names of the former organisations, for example, were still mentioned in many different places. Some divisions also needed some help in completing the information on their part of the website, since it is often difficult to find somebody with enough spare time within their own department. Furthermore, the staff of the UOCG planned to develop a so-called Intranet, a password-locked part of the website where internal document exchange can take place. Altogether this was enough work to do for two students in three weeks. Our task was to integrate and extend the different parts of the UOCG website. This mostly came down to getting information about several subjects from the responsible staff member and putting it onto the website, thinking about the overall structure of the website and integrating the information of the five divisions as much as possible. We also updated the personal pages on the website and tried to remove out-of-date information.

These tasks required us to communicate with many different members of the UOCG staff. We had to contact a lot of people in order to cover all the subjects the UOCG is engaged in. In the course of all this, we were able to realise a lot of requests from different staff members or divisions, about the part or project they were responsible for.

Now, a few days before the end of the case study, we have finished the major part of the UOCG

website and Intranet. In the next days we will have to finish tasks concerning the accessibility of the website for disabled people, completing the schedules and other information on the site for next year students and course members, offering recent pages with personal information of the staff members and completing lists of reports and minutes on the Intranet-page. If possible, we will also document the maintenance intensive parts of the website.

Working on this case study has been very diverse, besides the editing and getting familiar with the content management software, we also had to talk to a lot of different staff members about the best ways of information offering. We both see this as the best and most challenging part of our case study. Another challenging thing about this case was that we ran into a lot of problems along our way and that we were never quite sure beforehand what our next task would be. The former often involved problems with the content management system of the website.

Hereby, we would like to thank all employees of the UOCG that helped us during our case study for their guidance and ideas and we hope that we have been able to develop a website which satisfies most of their requests, wishes and ideas. ◀

## Case report UMCG

*By Ewoud Werkman & Wim Ottjes*

The Research Office at the University Medical Centre Groningen (UMCG) is responsible for the creation and implementation of the UMCG research policy. One of the main tasks is research quality control. This task consists of coordinating a periodic internal self-evaluation and using the results for the research programming. They do this by assessing the research output for the aforementioned internal evaluation as well as for the national external evaluation.

Every year a search is conducted on the research output of all scientists who have published in well-known medical journals. These medical journals publish all their articles using several different publication databases found on the Internet. These databases are Web of Science, Embase and Medline. Goal of our case study was to search those databases for all publications of the scientific staff of the UMCG. Therefore we needed an up-to-date database with all staff of the UMCG. The Research Office possesses a database with this information, but its database model did not qualify for generating a list of all current scientific staff for each different database.

Ewoud's task was to redesign the database model and extend it in several ways for easy data input and data change. One of the main problems in searching for names in the aforementioned databases is that some people use different, or not all of their initials when publishing articles. We extended the database to support these kinds of exceptions and added automatic export facilities to handle these exceptions when searching for names in the different databases.

After this part was finished, Wim could start with the search for the articles in the different databases. For Web of Science, there is a web-based search interface that could be used. The program Winspirs can access Embase and Medline. All articles needed to be imported into a Reference Manager database. The current version of Web of Science is able to export directly into a Reference Manager database. Winspirs lacks this ability, so all articles needed to be downloaded in a text-based format and imported into a Reference Manager database afterwards.

Duplicate articles were one of the biggest problems that arose when downloading articles from different queries in different databases. Since the databases have some overlap and two scientific staff members can be mentioned as author for

the same article, downloading duplicates was unavoidable. Furthermore, downloaded articles from persons that are not working in Groningen but have the same name and initials should not be charted. Adding a location restriction (Groningen) excludes too many results, so we couldn't use that most of the time. All these articles had to be checked by hand. After excluding all duplicate and alien articles, all Reference Manager databases were merged. After a final check it will be possible to use the results for generating the Annual Report of the UMCG.

We managed to decrease the complete search time with one week compared to last year. After we finished the charting of all publications, we evaluated the several problems that arose during the search operations using the automatic export and during the search operations through the different databases. We have made some recommendations on how to tackle them for the benefit of next year's chart. ◀

## Case report University Library I

*By Martijn Bodewes*

The University Library (http://www.rug.nl/bibliotheek/) of the Rijksuniversiteit Groningen (RUG) has a department called Digital Library. This department builds applications for the library and supports the digital working environment in the library. One of the main projects the digital library department is working on today, is the electronic storage of documents in a large database. Such a database is called a Repository. These repositories can easily be integrated into the university webplatform and can easily be made accessible for users from inside and outside the university.

With each document there is a set of metadata associated to it. Metadata is data like the title, the name of the author, the date of publishing, etc. This metadata is stored into a repository. In the near future the RUG is going to work with a new system to record its scientific output. The old system (called Ozis) is replaced by a new system, called Metis. In Metis it is possible to collect all kinds of data. One of them is publications. These publications can be described by metadata. It is an obvious step to combine the repositories with Metis. Filling in the details of a document in both systems is bound to be error prone and it is time consuming. To circumvent these problems the two systems should be combined into one system. But the two systems differ too much to do this (fairly) easily in a short amount of time. The solution is to use the metadata from one database and import it into the other one.

The developers of Metis have built in a new feature, an upload button. This button is used to upload the metadata entered into Metis to a web application. This web application then stores the metadata in a repository. Before the web application that can handle the upload could be built, some research had to be done on the internal workings of Metis, because Metis is a new system at the RuG and currently nobody is using it at the university.

After the internal workings of Metis were better understood, the design of the web application could begin. Fortunately, there was already a web application that provided an upload service to the repositories. In the existing one, users had to fill in all data themselves. The final design was to extend the existing upload facilities to interoperate with the upload button in Metis. The final result is an extended upload facility that is capable of handling Metis upload requests.

I had a good time at the digital library department, especially the research into the problem and design of the solution were interesting problems. With more research it could even be possible to combine more of the systems at the library. ◀

## Case report University Library II

*By Feike Kramer*

Current developments in sustainability, energy and environment are the centre of interest. A great part of research is being conducted in the northern region of the Netherlands. The research is not only conducted at the University of Groningen and the University of Twente, but also at other institutes like the International Gas Union, the Centre for Energy and Environmental Studies, Energy Delta Institute (EDI) and the Hanzehogeschool Groningen. The University Library works on a project, called 'NorthSee'. Its target is to create a repository containing scientific and scholarly output of this research and education and creating a number of services on that. The result will be an operational portal that serves as a knowledge centre of international importance. The assignment of this case study was to create an initial version of this portal with advanced search capabilities and a rating and reviewing system.

*Functions*

The most important function of this portal is its search capability. The visitor of the website should find the articles of his interest easily and quickly by querying for title, author or other attributes and selecting the repositories of interest. The articles are stored in many different repositories, but for searching through all these repositories only one interface exists, called MetaLib. To communicate with MetaLib the portal should send XML files back and forth to the MetaLib server; first to authorise and authenticate, then to send a search string. The MetaLib server answers with the number of search results in the different repositories. Querying the MetaLib server again can fetch the metadata of the articles. Because of the large number of articles available and the different styles used by the different institutes to store metadata of articles, it is difficult to streamline the different attributes of the metadata. Most important are title, author, year of publication, keywords, ISSN and ISBN numbers and the link to access the full text of the article. Another function of the portal is to rate and/or review the different articles. I developed a rating and reviewing system, which generates a number of lists, like the most viewed, top rated, last reviewed and most reviewed articles.

*Technology*

The University Library's requirement was to develop the portal in a PHP/MySQL environment. The portal contains a content management system that enables the users to maintain the different pages easily. The result of my case study can be found at http://northsee.dare.ub.rug.nl. Because the portal is still in development by the University Library, some parts of the site don't work as expected. ◀

## Case report NAM

*By Johan Brondijk & Joris Kampman*

One of the three areas in the world most interesting for oil and gas drilling is the North Sea. There are a few hundred oil and gas fields currently in operation, and also a few hundred production installations to transport the oil or gas to the surface. The early fields, which are in general larger, have been in production since the 60's. In the period between the 80's and 90's the production increased further, and a peak was reached around 2000. Now, the North Sea is regarded as a mature province on a slow decline. Although the earth below the sea bed is (on a rough scale) well known, still new discoveries are made, but these are mostly smaller, harder to exploit fields. However, thanks to ever more sophisticated technology, important amounts of oil and gas can be drawn from them. At a certain moment a platform will come to a state in which it is not cost-effective anymore, and it will be decommissioned. The exact moment is difficult to predict; it depends on many things, including

the price of oil, technology etc. In areas such as the Gulf of Mexico a large number of platforms are already decommissioned. In the North Sea only about of 15 rigs are decommissioned (for example Brent Spar (Shell, '91-'99), K11 (NAM, '97), but in the next two decades, there will be more wells which cease production (13). At this point the decision has to be made, what to do with the abandoned structures. A brainstorm session and a small research resulted in several ideas, which are grouped into five categories. Two of them are specified in the report: Total removal and on-shore dismantling, reuse of the structure as a whole, reuse for a non oil or gas related activity and reuse of parts of the structure. Also the history of other disused platforms, risks and legislation have been investigated.

Because limited time was available, focus was aimed on two of these options, namely the total removal option and the option of creating artificial reefs using offshore structures. For the first option two Dutch companies have been contacted, the Ecodock N.V. project and ROS Holland B.V. For the second option a Dutch expert in the field of artificial reef research has been contacted. In this area also much more literature is available. The Ecodock project has not been realised yet. The plan is to build a demolition dock in the Eemshaven, in the north of the Netherlands. From their website: "The aim of Ecodock is to gain and keep a leading international position in the field of demolition of dry-cargo ships, tankers and platforms, whereby ecologically sound working methods, favourable employment conditions and profitable exploitation form necessary conditions." Ecodock has a lot of potential for the near future regarding the decommissioning of gas producing platforms owned by NAM. ROS Holland was incorporated as Ltd with five companies as shareholders: towage and salvage specialist Svitzer Wijsmuller, mechanical contractor Genius Vos, electrical & instrumentation contractor Fabricom Oil and Gas and consultancy and engineering group DHV and HKS Metals (Wrecking company). These five companies should be able to handle the entire process of dismantling the decommissioned gas production platforms as well as the entire spectrum of possible problems that may be encountered. DHV has got experience in demolishing onshore constructions and is the driving force behind ROS Holland BV. When a tendering procedure is at hand, DHV consultants set about to assess the problems and possible bottlenecks. It is expected that ROS is able to come up with a competitive, competent and environmentally correct plan.

It is rather clear that the creation of artificial reefs in the North Sea has economical and ecological advantages. If properly cleaned, parts of disused oil or gas production platforms, in particular the jackets, form excellent structures for the building of artificial reefs. In this way the largest parts of the structure do not have to be transported over often great distances, reducing the transportation costs for oil companies significantly. Good regulation and monitoring is very important, in particular in the case of using waste material as building blocks for the reefs.◀

## Case report XPAR Vision

*By Joost Massolt & Sietze van Buuren*

XPAR Vision BV, with headquarters in Groningen, the Netherlands, supplies hot end infra-red camera equipment to the container glass packaging industry. The infra-red cameras are strategically configured as close as possible to the forming process, namely along the conveyor belt and just after the IS-machine (Independent/Individual Section container forming machines are made up of individual but identical sections placed side by side in line). From this position thermal images of newly formed containers are captured and analysed in real-time. The working principle of the infra-red technology has been

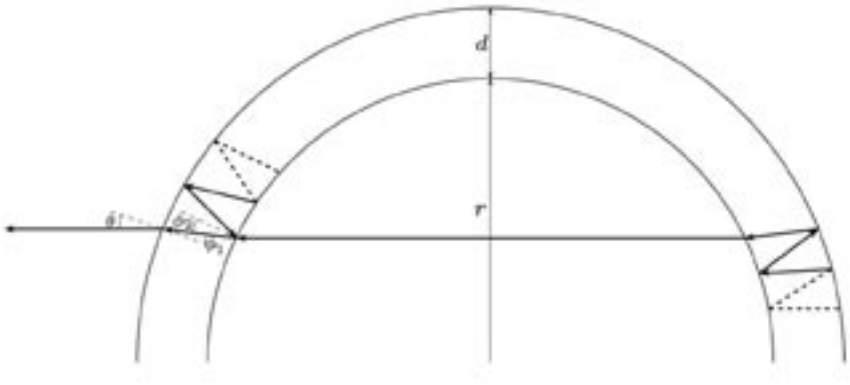


Figure 1: The reflections and refractions in a cylindrical bottle

patented by XPAR Vision. It is the application of infra-red technology, combined with the optimal position in the glass production process, that makes it possible for glassmakers to aquire real-time information about the temperature and the glass distribution of their products (for instance jars and bottles). Consequently, for the first time glassmakers are capable of simultaneously improving the quality of their products, increasing the pack-rate and optimising their hot end output performance. XPAR Vision now wants to develop a technique which allows the glassmakers to have a look at the temperature profile inside the glass. A non-uniform temperature distribution inside a glass bottle can result in defects in the glass, resulting in a glass bottle with considerable less strength. This makes it important for glassmakers to be able to recognise these non-uniform temperature distributions in glass. Our task was finding a method to measure the temperature profile inside a glass plate and a glass bottle. We investigated two candidate methods. The first candidate involved an infra-red camera with a variable viewing angle. Changing the angle of incidence of the camera with respect to the glass, one should be able to receive extra information. This information could be used to reconstruct a temperature profile. To test the usefulness of this method we made a model using Matlab that calculated the intensity under a variable incidence angle. The reflections and refractions in a glass bottle can become somewhat complicated, as shown in figure 1. However, we found out that it was not possible to obtain the desired information of the temperature profile. In the second method two cameras were used. They were positioned opposite of each other, with the glass specimen in between. Comparing the data in a Mathematica-simulation of both cameras for different temperature profiles (which were inverted from the centre), we could determine if we could see whether the peak of the profile moved to one side of the glass. There was only a small deviation of the measured values, compared to those of the method described above. Therefore it is doubtful whether this method should be used in practice. As time of this case study had run out, we weren't able to finish it completely. However, Sietze will do an internship, in which he can continue working on this project. Results of that internship are, however, out of scope of this report. ◀

## Case report Océ

*By Anisa Salomons & Bernadette Kruijver*

Océ Printing Technologies is one of the world's leading suppliers of high-quality and innovative products and services for use by professionals in print and document management processes. The company focuses primarily

on professional environments in which large volumes of documents are processed. Océ's customers are therefore mainly active in the industrial and printing sectors as well as in office environments. For this purpose Océ develops and manufactures its own advanced machines and systems for use in the production, distribution and management of documents. Océ also offers its customers innovative services in the areas of consultancy, outsourcing and – in cooperation with partners – financing. In-house product development and consistent investment in Research & Development are characteristic features of Océ. They provide Océ with its own unique technology base, which largely forms the cornerstone for the success of the product range. Océ's innovative capacity is also broadened and reinforced via alliances with strategic partners and via cooperation with co-developers. Océ operates in eighty countries and has its own sales companies in some thirty countries. The company has over 21,000 employees, 40 per cent of whom work in sales and service. Océ's research and manufacturing facilities are located in the Netherlands, Germany, Belgium, France, the Czech Republic, the United States and Canada [Annual Report Océ 2004]. In our case study we have tried to answer the following question: Are the circumstances in Malaysia and China beneficial to develop R&D activities? For our research we have conducted interviews with several companies of Western origin in the countries. Besides this we have done a literature study. For an extensive explanation of our case study we refer to our report. Here we will only summarize our conclusions. In comparing Malaysia and China, the latter comes forth as the best location to employ R&D activities. Malaysia has some advantages, like the large number of native English speakers and the more transparent governmental system. The biggest disadvantage is the relatively high wages in Malaysia and it is probable they will rise even further. China has 1.3 billion citizens causing a slower rise of the wages. The education level in urban areas increases rapidly. Nowadays there are five times (11.1 million in 2003) more people higher educated as in 1990. Furthermore China cannot be ignored in the world market. For every five people in the world, there is one Chinese. Besides that the Chinese economy is growing very fast (9 percent in 2004). To acquire a good position in this fast growing market, it is better to start today than tomorrow. As an old Chinese proverb says: "The best day to plant a tree was twenty years ago, the second best day is today." ◀

## Case report SKF

*By Ruben van der Hulst*

SKF, Svenska Kullagerfabriken, is a Swedish company founded in 1907. At that time, the company manufactured roller bearings based on the patent of the self-aligning ball bearing by Sven Wingquist. In 1910 SKF had 325 employees. Nowadays, SKF has about 40.000 employees world-wide and is the leading global supplier of products, customer solutions and services in the rolling bearing, seals, mechatronics and lubrication systems as can be read on their website www.skf.com. In 1972 the SKF Engineering & Research Centre in Nieuwegein, the Netherlands, was opened. This case study was done for this centre and was not a normal case in the sense that it was also my Bachelor research project. Therefore, I did twelve weeks of research. Also I did the case on my own.

Bearings are mostly used in machine shafts and vehicle axles to reduce friction. They consist of an inner-ring and an outer-ring separated by a set of balls. In order for bearing components to last as long as possible, many efforts have been spent on identifying the causes of failure of rolling contact fatigue. One of the reasons of fatigue failure during rolling contact is the presence of non-metallic inclusions. In this research, micro-structural changes around non-metallic inclusions ($Al_2O_3$ particles) were investigated. These microstruc-

tural changes appear white after etching, being more resistant to the chemical attack of the etching than the surrounding matrix. Because of this feature, these micro-structural changes are sometimes known as 'white etching areas'. They are called wings of a 'butterfly' as well, because of their shape (see Fig. 3).

As can be seen in Fig. 3, a butterfly consists of an inclusion (the big, more or less round particle in the middle) and two wings. A wing is composed of a crack (see A in Fig. 2) and a white etching area (see B in Fig. 2), looking like the smooth part and the feathery part of a wing, respectively. On the right side of the particle the crack is above the wing, while on the left side the crack is below the wing, as can be seen on Fig. 2. This has something to do with the rolling direction of the bearing. So if you would roll the bearing in the other direction, the wings will form on the other diagonal and on the right side of the particle, the crack will be below the wing and vice versa for the other side of the particle. The cracks which form around these particles sometimes extend to the surface, causing a failure of the bearing. In order to gain more knowledge about the butterflies, I determined the hardness (which is a property of the material) of the white etching areas using nano-indentation. Normal bearing steel does not contain a lot of inclusions, making it very hard to find butterflies. To make the search of butterflies on the materials a little bit easier, an artificially contaminated material is prepared which is a mixture of normal bearing steel together with $Al_2O_3$ particles.

Nano-indentation, or ultra-low load indentation is used to determine the hardness (H) and elastic modulus (E) of the specimens. With nano-indentation, an indenter is forced into the surface of your material, leaving a hole behind. The size of these holes is very small: approximately 1 µm. When the machine makes this hole, the load-displacement data are recorded. With this data, several properties of the indented material, such as the hardness (H) and the elastic modulus (E), can be calculated. Scanning electron microscopy (SEM) is a machine which is actually a microscope. The only difference with normal optical microscopes is that it uses electrons instead of light. Because of the shorter wavelength of the electrons, very high magnifications can be reached. With a normal optical microscope these holes can not be seen clearly, so SEM is used for observation of the holes in the indented materials. Also, a polishing and grinding machine is used for making the surface of the materials as flat as possible. This has to be done or else the nano-indentations will fail.

With the competition of other bearing companies in mind, the results of my research are confidential, so unfortunately I can give no

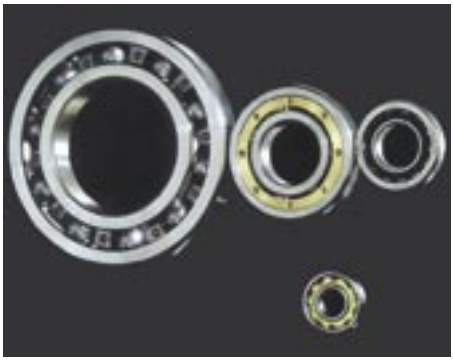

Figure 2: Different ball-bearings

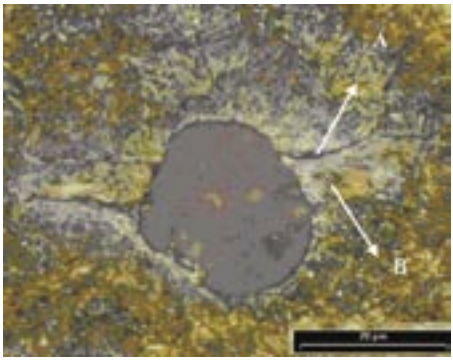


Figure 3: Optical microscop image of a butterfly

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Our products also play an important role in people's daily lives. Around 180 roller bearings are to be found in a normal household – in the washing machine, refrigerator, food processor, drill, car, bicycle, skateboard, hairdryer, computer and CD player. These are just a few examples of machines and tools that are designed to make life easier. For further information, www.skf.com

SKF is a leading supplier of customer solutions and service in roller bearings, seals, linear products, technical support, maintenance services and operational safety monitoring. The Group's sales companies also have the support of 7,000 distributors. Net sales in 1999 amounted to SEK 36 billion and there are around 41,000 employees. The Group has been awarded ISO 14001 environmental certification.

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information about that.

This case was actually the first research I did fully on my own. I liked doing it because of several reasons. One is that you get a lot of responsibility. You should deliver a reliable product (report) and also you should be very careful with the machines that you use, because these are very expensive. And although it took a lot of time, you can get a glimpse of what you may be doing later when you will be working in this industry. ◀

## Case report ProGamma

*By Georg Muntingh & Wicher Visser*

**An implementation of the ECM algorithm**

Our employer and supervisor Tom A.B. Snijders is Professor of Methodology and Statistics at the Faculty of Behavioral and Social Sciences at the University of Groningen. The assignment was to implement a statistical algorithm in MLwiN. In order to do this, it needed to be worked out in detail.

The largest part of the algorithm was the computation of a certain spline. Since programming in MLwiN is rather cumbersome, we first implemented this part in Delphi. Aside from that, Professor Snijders also wanted an implementation of this part in Delphi for other usage.

*The algorithm*

The algorithm is called the Expectation Conditional Maximisation (ECM) algorithm. When supplied with input data (knots, corresponding data points and their weights), this algorithm computes iteratively the parameters of a certain model, in this case the Hierarchical Linear Model with an additional non-linear term. To obtain such a "fit" of the data, the expectation of the complete log-likelihood is maximised. Since this is computationally expensive, this maximisation is broken up into a linear maximisation (conditional on the non-linear part) and a non-linear maximisation (conditional on the linear part). This is looped until convergence. The linear part of the model is estimated by the Iterative Generalised Least Squares (IGLS) algorithm, which was already implemented in MLwiN. The non-linear part of the model is estimated by the algorithm that computes the natural cubic spline.

*Calculating the natural cubic spline in Delphi*

Georg started by reading chapters from the book Nonparametric Regression and Generalized Linear Models, written by P.J. Green, B.W. Silverman. In this book, an algorithm for calculating the natural cubic spline in linear time was explained. Part of the algorithm was described in detail, a part was coarsly described and a part was wrong. From this, Georg started to write an article in which the algorithm was described in pseudocode, ready to be implemented in any functional programming language.

Wicher used this article to start implementing, one by one, the functions from the algorithm in Delphi. While implementing and during testing of the functions, he found errors and ambiguities in the article. These were corrected by Georg.

When Wicher finished the implementation in Delphi it had to be tested. For this we looked for another implementation of an algorithm calculating the natural cubic spline. We found out about a free algorithm implemented in the free statistical environment 'R'. Comparing results indicated a little error. After correcting this error, the results of the implemented algorithm seemed to meet the precision of the algorithm. For an example of a comparison of spline fits, see figure 4.

*Calculating the natural cubic spline in MLwiN*

After this, Wicher implemented the algorithm for computing the natural cubic spline in MLwiN. This was a lot of work, and it was difficult to

write it in the rather restricted form of the macros from MLwiN. Because the functions to implement in MLwiN corresponded one-to-one with the functions already implemented in Delphi, it was relatively easy to test whether the functions were implemented correctly.

*The ECM algorithm in MLwiN*

During this, Georg started to think about the way the ECM algorithm needed to be implemented in MLwiN. Professor Snijders explained almost everything in detail, but at first Georg found this difficult to grasp, mainly because of the opaque internals of MLwiN. After talking several times with Professor Snijders and reading about MLwiN, we were able to implement the ECM algorithm in MLwiN.

*What it was like*

We both felt very lucky to be assigned to this case. We learned a lot from doing this case, and it was very satisfactory to use mathematics and statistics we learnt at university courses to actually create something useful. Because of the flexible hours it was easy to plan our activities. On top of that, Professor Snijders was very kind and patient and seemed more like a supervisor than an employer. ◀

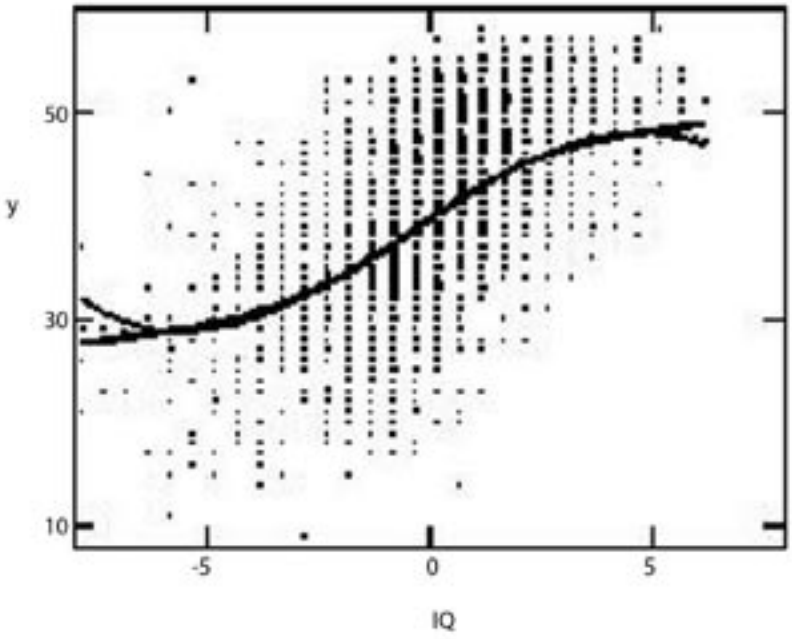



Figure 4: Language test score (y) against centered IQ score: raw data, cubic polynomial estimates (thin), quadratic regression spline estimate (dashed), and smoothing spline estimate (bold)

# Program

## Beijing

| | |
|---|---|
| Day 1 | Journey to Beijing |
| Day 2 | Arrival in Beijing |
| Day 3 | Hutong Tour and Peking Opera |
| Day 4 | Tiananman Square, Forbidden City, Temple of Heaven and Kung Fu show |
| Day 5 | Peking University |
| Day 6 | Tsinghua University and Wangfujing Street |
| Day 7 | Raycom |
| Day 8 | National Astronomical Observatories CAS |
| Day 9 | Intel China Research Center |
| Day 10 | The Great Wall |
| Day 11 | Summer Palace and Acrobatics show |
| Day 12 | Institute of Chemistry and Institute of Software |
| Day 13 | Kenuohua and Beijing Zoo |
| Day 14 | Chinese Institute of Atomic Energy and Stone Flower Cave |
| Day 15 | Dutch Embassy and Ricoh Software Research Center |
| Day 16 | Journey to Kuala Lumpur |

## Kuala Lumpur

| | |
|---|---|
| Day 17 | City Tour Kuala Lumpur |
| Day 18 | Forest Reserve Institute Malaysia and Batu Caves |
| Day 19 | Resting Day |
| Day 20 | University Putra Malaysia |
| Day 21 | MVD International and Western Digital |
| Day 22 | University Kebangsaan |
| Day 23 | Philips Semiconductors Seremban and Dutch Embassy |
| Day 24 | Leaving Kuala Lumpur |
| Day 25 | Arrival in Groningen, the Netherlands |

# Daily Reports Beijing

## Day 1: Thursday, April 14th
## Journey to Beijing

*By Joris Kampman*

Curse words could be appropriate when describing the feeling that I – and I expect most of my colleague travellers – had when my alarm clock woke me in a far from subtle manner at a far from reasonable hour. However, getting up at 4 o'clock in the middle of the night had an enjoyable purpose, namely that the study tour to China and Malaysia would start that same day. After realizing that, jumping out of bed and into my clothes (that are always piled up on the floor, hence the 'jumping into'-part) was an easy thing to do. A last suitcase check and I was off to the Groningen railway station. Of course breakfast was prepared the night before and consisted of an arrangement of luxurious salads on white bread buns, which would be eaten on the train. However, semi-fluidic salads apparently have a tendency to spread out overnight, and a big mess of bread parts and unwantedly mixed salads made breakfast an event in which tissues were a must.

I decided that – since my suitcase had wheels and a handle – a bike ride would be the best option. Buses don't ride at this terrible hour, and walking there would take too long and thus would cost me my good travelling spirit. I know it was an early hour, but I thought I saw small portions of smoke coming from the little plastic wheels. But while the lifespan of my little wheels decreased rapidly, a car pulled over and offered to take my suitcase before it would break down. Spirits among the STARS group rose even higher in my opinion, since the car that stopped belonged to Anna's parents who were kind enough to help.

Once on the train – which of course was totally empty – festivities could start. Everyone was excited and looking forward to the trip. About myself I can say that my excitement was a little bit tempered by the combination of feeling hungry and the knowledge about the formerly mentioned state of my breakfast. The train ride was long, but looking around, it seemed that everyone kept themselves busy with learning Chinese (yeah right!), studying the program, or playing a soon to be infamous card game of 'Schwarzer Peter' (which is German for 'Black Peter'). This kids' game – for age 4 and up – kept us alive and mentally sound during the long trip. That during the three week trip 'Schwarzer Peter' would acquire a cult status in the group could not be expected back then. Schiphol Airport! After checking in our luggage we were finally freed from these heavy burdens-on-wheels. Since it was about 12 o'clock and we had some time to spare before boarding, different groups went in different directions: tax-free shopping, having a cup of coffee or going to the McDonalds (Setting a fine example there, STARS Committee!) were among the activities chosen. Feike, Bastiaan and I went for a cup of coffee but since only one cup of coffee didn't kill all the time before boarding, it was decided unanimously that a beer would be

a good 'non-official' starting point for our trip.

Twelve o'clock and I am sitting in a very comfortable chair in a Malaysia Airlines plane. It has personal video screens and I am sitting in a spot Rogier so desperately wants to have: a window seat. The seat next to me is empty, so this is ideal for placing stuff like CD's and earphones. I think Rogier understands that I am not trading my superb seat for a cramped aisle seat with no leg space, let alone a 'spare' chair. Next to the empty seat Feike is writing out his notes from a meeting he had. Yes, well, obviously on a trip to the Orient, ones meeting notes must be part of ones baggage, because one never knows if they will come in handy. Thinking about this puzzled me for at least an hour, which meant there were only eleven hours of flight left.

About one hour into the trip, an announcement: "This is your captain speaking. I'm sorry to interrupt, but we have a problem…", the long silence that followed convinced me that the pilot had died in a cockpit inferno, leaving the plane crashing down with outrageous speed. Neck hairs rose, and goose bumps all over the place, before the pilot – who apparently had *not* died in a cockpit inferno – finished his talk by saying that the problem was that one of the video recorders didn't work!! Needless to say, sleep wasn't an option for at least 7 hours, since my heart rate first had to be lowered to a measurable rate.

Around me everybody was happy trying out airplane telephones and having heaps of unexplained fun with them. Surprise-calling up seat number 'who-cares' was amazingly a popular plane pass-time for (I didn't time it, but I suspect it to be at least 30 minutes). I was still trying to get over those dreaded words: "...We have a problem…". Pilots should be trialled and convicted for a sentence like that. ☯

## Day 2: Friday, April 15th
## Journey to Beijing

*By Joris Kampman*

The first part of the trip (the flight from Amsterdam to Kuala Lumpur) was a raging success: no crashes, no screaming cockpit infernos and no breaking of wings – despite heavy movement. Yes, concluding that flying is not my favourite part of travelling is justified. But nonetheless, we arrived in Kuala Lumpur (KL). Local time was 7 A.M. and again there was time to spend before our next flight to Beijing was scheduled. The KL airport is a very modern airport with lots of modern products, modern transportation and modern prices. Really modern prices; Amsterdam looks cheap by comparison. And that means that it's really very modern. However a nice Danish beer and a refreshing splash of water made people feel less like they had been on a plane for thirteen hours. After hanging around the main part of KL airport a while, we found out that our plane to Beijing would depart from – of course – the auxiliary departure hall which was not conveniently located near the main airport building.

So we took a monorail to this second building. Searching a map for the appropriate gate led to the conclusion that our departure gate was – of course – at the end of the furthermost part of this auxiliary building. But a brisk walk was just what the STARS group needed to get in shape for the next flight.

So there the group was sitting, lying, hanging on stuff or on each other near the gate. Only one day had past and already laziness was the operative word. It was a nice sight; well at least the sight was nicer than the smell. Thirteen hours on an airplane would give any group a mixture of strange and really penetrating odours. Time was passed with a game called: 'pick a card, any card' in which the dealer guessed the colour of the card. This card game is illustrative for the state most people were in during this waiting session. The plane to Beijing was not nearly as luxurious as the one before, but since the captain didn't make questionable remarks containing the still dreaded words "...we have a problem...", this flight went by nice and easy. Time was spent looking through a few magazines for a few times, looking out the window where nothing was to be seen and slowly growing numb. But the absence of goose bumps, raging heart and me going numb, made that me and some others could finally get some sleep before we landed in Beijing.

Now completely plane-cooked and deprived of all biorhythmic sense, we stepped out of the arrival hall. The supposedly strict – and by some a little bit feared – Chinese customs proved to be an easy passage. This shows how much we knew about the country we were entering. And after the 37th 'buddy check' (a phenomenon I could talk about for hours and hours only using questionable sentencing) we had finally arrived in beautiful China.

Tony and Candy were there to pick us up. Since not one of us is Chinese or has any knowledge of the Chinese language except 'ni hao' – which was pronounced badly by almost everyone at first – we were very happy to meet them and to have them show us around. And since the sun was shining and we were outside where the wind was blowing fresh air through every smelly fibre of our clothes, our hair and, hopefully for some, their teeth, everybody was awake and alive again.

The bus ride to our hostel (Xindadu) was a slow one. The main objective when driving a bus in Beijing is apparently to use up as few litres of petrol as possible and thus remaining in the low and extremely low rpm's. That gearboxes and clutches die, screaming for help (or at least that is the sound they are making when gears are shifted), is of no concern to the bus and taxi drivers of Beijing. We arrived at a beautiful hotel that had Xindadu written on it in big neon letters and a bellboy to take the baggage of guests visiting that four star hotel. However, next to this hotel, the Xindadu hostel was located where the STARS group would stay for the next two weeks. A

very comfortable and hospitable place, where we were divided into groups who shared a six person room with three bunk beds. After freshening ourselves up we went for our first real Chinese dinner in a local restaurant – obviously a Chinese restaurant. After good Dutch practice all food was gone in minutes, while civilized Chinese people spent hours eating and socializing, there we were shovelling food into our mouths. The only thing keeping us back was the use of chopsticks. Some of us (we are after all a group of scientists) had been practicing, but speaking for myself I can say that eating with those tiny, slippery, roll-away chopsticks can make a lengthy event of even a Dutch student meal. The night ended with a big pint of beer in a local bar (called the BarBarBar), where – we were still clinging to our Dutch habits – melodically unsound singing of songs brought us deeper into our first Asian night. ☯

## Day 3: Saturday, April 16th
## Hutong Tour and Peking Opera

*By Anisa Salomons*

This was our first day in China and we had a busy schedule ahead of us, although we started at ease with a breakfast at our local Chinese restaurant, located in a street just behind our hostel. Although it was a Chinese restaurant, they served a simple European breakfast, which we could enjoy almost every morning we were in Beijing. The breakfast consisted of white bread, sometimes half-frozen, sometimes a little mouldy, with two kinds of jam, yellow and red (probably strawberry) and a fried egg.

After breakfast we took a taxi to visit the Drum tower in the Hutong, the old part of Beijing. The taxi driver couldn't speak a word of English, so we could only hope that he would bring us to the correct location. The drive through Beijing was really interesting, you could see the city and its immense buildings. After a while we drove into an area with lower housing; it was still busy in the street, but no longer a five lane motorway. Then the driver stopped. We looked around wondering whether we were at the good location, or whether we could see a Drum tower or people from our group. Luckily there was another taxi with people from our tour in it nearby, so we decided it was safe to get out of the taxi. We didn't exactly know which way to go, but there were other people from our group who didn't know the way either, so we would figure it out together. But we didn't have to worry at all, because out of the street next to us came another group of people, one of them Anna, who knew where the Drum tower was. It was just around the corner.

The view was beautiful from the 48 meter tall tower; you could see the Bell tower standing next to it, and the Hutong below with its grey rooftops of houses, with courtyards in between. The Drum tower was built in 1272, during the reign of Kublai Khan, and it used to tell the time. Originally it consisted of 25 drums, one large drum and 24 smaller ones. Nowadays there

is only one big drum and four smaller ones, the drums are played four times a day. We were lucky to be just in time for the drum ceremony. Five people played rhythms, especially the big drum player was very good. The next activity was a rickshaw tour through the Hutong. The Hutong is the old part of Beijing, which is now rapidly disappearing. The buildings are very old: development of the Hutong started in the Yuan dynasty (1206-1341). In the old days, a whole family, consisting of three or even four generations lived together in one house. The houses are shaped around a square courtyard. The size of the courtyard was an indicator of how wealthy the family was. Nowadays, different families live in a courtyard together and rent their houses from the government.

At the foot of the Drum tower there was a square where a lot of rickshaws were gathered with drivers in colourful uniforms. We had to remember the driver's number, but that was a bit difficult, because the numbers were written in Chinese. Luckily, after a small stop to look at the lake and a picturesque bridge, we managed to recognise our driver. The lake was actually not a lake but a very wide river, but since the Mongols had never seen such a wide river, they called it a lake. As soon as we got out of the rickshaw there were people everywhere, who wanted to sell us souvenirs. "Rolex, Rolex, beautiful Rolex."

We continued our rickshaw tour through the Hutong and stopped at the house of a local for lunch. We could visit their house and they cooked us a wonderful lunch. Another woman who lived in the courtyard was very proud of her house and showed it to us. She couldn't speak English, but she warmly welcomed us to her house. The next event was a visit to the Panjiayuan antique market, where everyone could go ballistic at buying souvenirs. It was a very busy market with lots of stalls at which you could buy beautiful Chinese teapots and dragons. At the market we experienced Chinese public toilets for the first time. We really had to get used to them. The strangest thing was that people didn't stand in one queue, but in a different queue for every single toilet, and jumping queues was not uncommon. Sometimes they let foreigners go first. It was especially important not to forget to bring your own toilet paper, as you rarely find it in a toilet. We had dinner in a Chinese restaurant across the street. As always, food was plentiful, and we got a taste of Chinese soup, which is not the best part of Chinese cooking. And we had our first taste of Peking duck, especially cut for us at the table.

Again we got into our own 'King Long' tour bus, this time to visit a traditional Chinese form of amusement: the Peking Opera. Prior to the opera we could see how the players put on their make-up. The story of the opera was different to western storytelling. In the back of the theatre you could see some people nodding off. After this busy day and tiring journey from the previous days I took an early night's sleep, and skipped the visit to the BarBarBar. ☯

## Day 4: Sunday, April 17th
## Tiananmen Square, Forbidden City, Temple of Heaven and Kung Fu Show

*By Bastiaan Zijlema*

It wasn't very easy to get up in the morning, maybe I had had one beer too many last night in the already famous BarBarBar.
But after a fresh shower I woke up a little more, and we went to the restaurant where we had our daily breakfast. Today a western breakfast was served, so we provided our dry bread with some butter segments, and enjoyed the baked eggs. At that moment I didn't realise that it was my last breakfast at the restaurant, because some of us decided to skip the breakfast the next days to obtain some extra valuable sleeping time. Otherwise I probably would have enjoyed it even more. After breakfast it was time for the cultural program of the day. The first attraction we were visiting was the Forbidden City, a huge complex of palaces where the emperor used to live. When we arrived and got out of the bus, it was immediately obvious that this place is visited by many tourists. Several very pushy street vendors tried to sell us all kinds of souvenirs like postcards and "the Little Red Book", some best-seller written by a guy named Mao. When we entered the actual city, one thing that was striking was that a lot of buildings were under construction. A lot of construction workers were working very hard to renovate the old structures, and even more workers were resting very hard.

This was a little bit disappointing, and to be honest, at first I wasn't very impressed. But later on, when the sun broke through the smog, everything looked a lot brighter and I was able to enjoy the sight of some nice temples and buildings. Especially at the back of the city there were some very nice little courtyards with beautiful trees in them. A lot of tourists were walking around in the palace, but our group was easily recognisable, because almost everyone was wearing his or her red STARS '05 T-shirt.

This was very useful when looking for our group members and it really strengthened the team spirit. At one point we were addressed by a nice girl who was a art student, and we were asked to go to an art gallery. Later, this turned out to be one of the many tricks to lure tourists and make them buy some something they don't really want. But at that time we were so fresh and naive that we fell for it. Joris bought a nice painting, which may be worth a lot of money someday! Or maybe it won't... When it was time to leave, there turned out to be a little miscommunication. One part of the group was standing at one side of the city, and another part at the other side. Fortunately, I was at the wrong side, so I was able to enjoy all the beauties of the palace once more. After that we had lunch in a nice restaurant with some very good food.

In the afternoon we went to Tiantán, a park with some very nice temples. The biggest temple was the Temple of Heaven, which was quite impres-

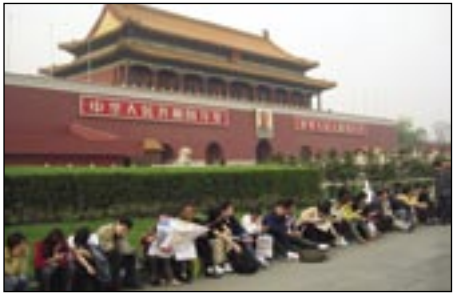
sive. But there were also some other temples like the Temple of Prayer and Good Harvest, and the temple of the Divine God. It also included a Whisper Wall, where people can communicate over more than 50 metres by just whispering towards the wall at a certain angle. But I think it was broken, because we only managed to communicate by shouting very loud. There was also some very nice nature, with heath and trees. This reminded me of the Ballooërveld, a very famous nature park in Holland, and made me long for home just one second. While walking around, we discovered there was another attraction besides the temples, namely us! The Chinese people found us very interesting and liked to take pictures of us. Especially the tall ones, people with long hair and the good looking were in demand, so I had a quiet afternoon. This time everybody decided to take the same exit, and we took off to Tiananmen Square. We were told this was the largest square in the world, and it was indeed impressively large. It turned out it was a good place to play some football too. Some other characteristics were the large amount of uniformed men, a lot of kites in the air and the big portrait of Mao himself. After wandering around at the square we were supposed to have some dinner. We thought it was time for a healthy meal, so we decided to go to McDonald's for some quality western food. It's good to know that a Big Mac tastes exactly the same on the other side of the world. Another advantage of a western restaurant was the lavatory. Instead of a hole in the ground there was a real western flush toilet, and this resulted in a long queue of red T-shirts...

Next we went to the Red Theatre to see a real Kung Fu show. This show was very spectacular, and we witnessed some fantastic stunts. Impressive fighting and jumping, balancing on a sharp spear, smashing iron bars to pieces on their bare head and some other don't-try-this-at-home stuff. Afterwards, there was the opportunity to take some pictures with some genuine shaolin monks, and some of us eagerly grabbed that opportunity. When we returned at the hostel, everybody was very tired of this exciting day. Nonetheless, a few of us went to the BarBarBar for some nice Tsingtao beers, to make sure it wouldn't be easy to get up the next morning... ☯

## Day 5: Monday, April 18th
## Peking University

*By Georg Muntingh*

When I woke up it was 05:45 a.m. Maybe a little bit early, but this way I didn't have to get in line for taking a shower. Once at breakfast I was pleasantly surprised, because this day we had an Eastern breakfast for the first time. The first thing that was served was a small plate with pieces of tofu and a strange red sauce. We tried it and unanimously agreed that it tasted really bad. The next day we would hear that it was meant as some sort of supplement to the dough they gave us later. The rest of the food (the dough, the boiled egg, the strange pasta look-alike, and the rice soup) tasted pretty good though.



We went by bus to Peking University, or PKU or 北京大学 as they write it themselves, one of the most prestigious universities of China. Once arrived at PKU, we were welcomed by students of the student association. We split into two groups: a group for the Department of Computing Science and a group for the Department of Physics. Being a student of mathematics, I decided to join the physicists. In the entrance hall of the Department of Physics, we saw statues of the five leading Chinese physicists of the 20th century. All of them are related to PKU, and for each of them it was explained what they had done.

After this we went to a room to attend a talk with general information and some statistics about PKU. What was interesting for example, is that the research at the university goes hand in hand with the aim of the country. That's why there is a lot of research into reactors for electricity right now. Power supply is going to be a big issue for China in the near future. Next, we briefly visited three research groups at the Department of Physics. One of these research groups was the Femtoscience and Advanced Optical Material Research Group. Here they have a 'Femtosecond laser', which they use for the measurement of transitions of molecules. There is also a 'Femtosecond SNOM which is used for a combination of a high temporal and spatial resolution.

Meanwhile, the computer science students were received by the International Student Association and were accompanied to the School of Electronics Engineering and Computer Science. The school, which was founded in 2002, covers four first level subjects, including computer science and technology, electronics science and technology, information and communication engineering and physics. Currently, the school had in total 1272 undergraduate students, 771 postgraduate students and 285 doctoral candidates.

The director of the school welcomed us and gave us a talk about the study system in China, which differs from that in the Netherlands. Together with several Electronics students and students from the International Student Association we discussed these differences and talked about both countries. After the discussion, we received a tour around the lake that is located on the campus of the PKU. During that tour we talked to the students about studying at the Peking University and living in Beijing. Afterwards we went to the campus restaurant for coffee and lunch.

After the technical part, we had some time to sit down and talk with students. I thought this to be a great idea, because I had a lot of questions and talking to students is very easy and relaxed most of the time. Bernadette and I got to talk to Zheng Mingjie, a Ph.D. student at PKU. Luckily she was the talkative type of girl and also wanted to know a lot about us.

By now I had become a little bit hungry and, as luck would have it, we were going to have lunch. The lunch was delicious and there was a lot to

choose from.

After lunch, we walked around the enormous campus and saw several impressive things like the library, which is said to be the largest in its kind in Asia, the Western Gate and its entrance sign which is made by Mao Zedong himself, a beautiful lake called the 'Nameless Lake' (未名湖, Wei Ming Hu) and the 'Boya Tower' (博雅塔, Bo Ya Ta) which is famous for its view. Some Chinese students walked with us. I talked a lot with Sun Zhixiang, a master student in theoretical physics. He explained several things I didn't understand, gave further information and also just talked with me about the differences between China and Holland.

At 5 P.M. the campus tour came at its end and we were able to buy some souvenirs. We had to say goodbye to our new friends, it can't be helped. We got into the bus and drove back to our hostel. Once at the hostel, I was very tired and felt a little ill. That is why I decided to go to bed immediately and have a good long rest. Of course, none of this happened. Some of my friends somehow persuaded me to come with them to a hotpot restaurant (they know it's easy to convince me), and we had an incredible meal there (though not expensive at all). A few days later we would go to the number one hotpot restaurant in China, so I won't say too much about this. When completely satisfied, we went to the BarBarBar to have just one (large) beer and we went to sleep soon afterwards. ☯

## Day 6: Tuesday, April 19th – Tsinghua University

*By Joost Massolt*

Seven A.M. , rise and shine for the second scientific day! After a quick shower, that wasn't enjoyed by everyone (don't hang your dry clothes in front of a shower that has a broken shower head, Ewoud...), we went to the restaurant for another western breakfast. Outside, we noticed that the rain of monday had washed the sand from the air, and onto all the cars that were parked outside. A great day for your local carwash!

At around 9 A.M. we got on the bus. Half an hour later we arrived at the gate of Tsinghua University campus, where we picked up our guide. While waiting for our guide, we listened to some awful Chinese 'sky-radio' music, with lyrics like "if heaven was an hour, it would be twilight". Eeeuhw... Anyway, we were picked up by Yu Ming and Luo Sheng who were members of the Association of Student International Communication (ASIC). They were our guides on the campus tour. Tsinghua University was founded in 1911 as a preparation school for students who were sent by the government to study in the United States. In 1927, Tsinghua became a university. In those years, Tsinghua had a lot of faculties. In 1952, Tsinghua focused on technology. Years after that, Tsinghua again became a broader university. We started the tour at the auditorium, which was designed by American architects. Although the auditorium was designed

by American architects, Tsinghua itself has quite a reputation when it comes to design. A lot of buildings at the campus were designed by people from the university itself. The campus is situated in a lovely surrounding, with a lake in the middle of the campus. What now is "Tsinghua Garden", used to be the royal garden in the Qing dynasty. The building which houses the president originates from that dynasty. The difference with the PKU campus, which is situated closely to the Tsinghua campus, is that the latter has a more central campus than PKU. All the faculty buildings of Tsinghua are situated at the campus, although Tsinghua has its own nuclear power plant further north of the campus. The campus tour ended at the main gate, which was a perfect spot for another group picture. After that we went back into the bus to tour the campus by bus. During this tour, our guides told us that the homes of the teachers and the students are separated. Tsinghua has some huge student flats where four students live together in one room. They each have their own table, book shelf, internet connection and bed. Tsinghua has the largest single campus in China. Also situated at the campus (in the Institute for Mathematics and Computer Science) is the control room for Chinese satellites. In total 27.000 students study at Tsinghua University and it is considered the best university in China, after PKU.

Unfortunately, our visit to Tsinghua ended already at a quarter past eleven. Our bus driver set us off at a subway station so we could catch a train towards Wangfujing station, where a large shopping centre is situated. In the subway station, a young Chinese girl let loose her helium-filled balloon, which immediately flew off to the ceiling. Fortunately, Chinese ceilings are no match for Dutch guys! So Martijn was swung into the air and grabbed the balloon that was still touching the ceiling. After the balloon was given back to the happy Chinese girl, we continued our quest for cheap clothes and electronics (what of course was the reason to visit a shopping centre). However, we didn't find what we were looking for. The shopping centre was quite modern and built for the Western tourists that will come for the Olympic Games in 2008, so the prices were all quite high.

The group split up into several small groups. The group I joined was persuaded by an English speaking Chinese arts student to visit her art exhibition. Just when we realized how stupid we were to fall for such a trap (we of course had to buy art) and agreed that no one else should ever have to know how stupid we were, we ran into another group, who just visited the exhibition. What a coincidence! Anyway, we didn't buy any art and continued our quest. As said before, our quest became a complete failure, so we decided to drink some tea in a small restaurant. By just going into an alley you leave the crowded and Western style shopping centre and you enter a completely different world, where no one speaks English and where everything really is genuine Chinese. This is where you find the nice, very good, cheap restaurants. Of course, you almost

have to use sign language to order something, but that is a challenge! Once, I wanted to have the bill, so I tried to pronounce the Chinese sentence for "the bill, please". The waiter first laughed at me, and then we practiced in pronouncing the sentence together. Finally, I spoke the words in a correct way, victory! The waiter went back to his place and no bill came... Pointing at my money finally resulted in a bill.

After meeting all the other participants to collect money from the committee, the group was separated again. Some went to eat near the hostel and another group had dinner at a very good hotpot restaurant, a local specialty. We all found back the hostel, just by giving the hostel card to a taxi driver, who then drove you to the hostel for just a couple of yuán. How easy can it be? ☯

## Day 7: Wednesday, April 20th
## Raycom

*By Wicher Visser*

Half past six in the morning: an irresistible high frequency noise brutally interrupted a person's slumbering state of awakeness. Luckily we were given the chance to enjoy the beautiful Beijing morning half an hour earlier than scheduled. Although many participants did not yet see the benefit of this fortunate event, as they struggled to drop their veil of torpidity, it was bound to become a splendid day since we were about to visit our first company in China: Raycom.

Rumour spread a sandstorm would be imminent at Changping Science Park, housing Raycom and located at the northern edge of Beijing where mountains start to rise from the plains. There were some hilarious situations, due to the suggestion that we should prepare to dress up Arabic style. Fortunately the weather was splendid with clear skies (if the smog is ignored), much like the previous days.

Still dozing during a one hour's drive (where 3 hours were anticipated!), we arrived at Raycom. After a warm welcome by the company director, we enjoyed an interesting introductory talk. Raycom Technology, a private company founded in April 2000, is one of the early players in China developing ASIC designs for telecommunication, promised to be very compact, inexpensive and having a low power consumption. Employing a staff of about 70 people, with 30 members concentrating on research, Raycom's annual profit is about 3 million USD. Raycom can be regarded as a warm family, offering a ceremony (comprising a day trip) to all its employees upon each new product release. With their working day starting at 05:00 A.M. we could only have respect for these employees.

Following the general company overview, we were given a work floor tour. Raycom has no production facilities: it focuses on integrated circuit (IC) design. It does, however, house a test laboratory in which endurance and stability tests are executed. This test facility is situated next to the dining hall, which is a nice room with a

ping-pong table. On the wall one can find various product releases, among which the pride of the company: a fully integrated chip combining optical signals to various other signals which enables about 20.000 civilians to be connected and can handle 240 connections at any time.

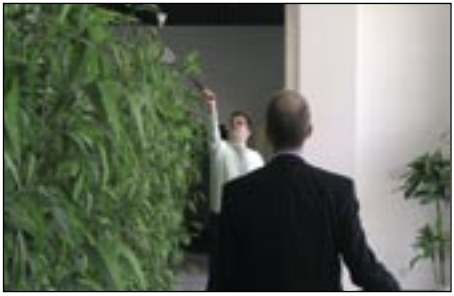
Lunch, offering various dishes like goat leg and strawberries, was excellent. During this relaxing break many of the STARS members took a chance to catch some sun at the parking lot or on the roof, while others attempted to produce some sweat during a game of badminton in the lobby. Once again it was affirmed that sports unite different cultures, as company employees joined the game.

Due to a power failure the next presentation was postponed. To kill the time and enjoy the weather a few minutes longer, we took a short walk to the nearby river. Watching the opaque water flow, our European charisma turned out to be an interesting eye-catcher for the passing local labour force. Having returned at the building, an elaborate photo shoot was organised. Besides the standard group picture, a few of our characteristic participants were requested for a more intimate shoot, to which they willingly agreed. It was very interesting to observe that certain physical characteristics, such as length and seasonedness, were somewhat more attractive.

With power available again, we sat ourselves again in the comfortable conference room. Two of Raycom's chief engineers presented a technical overview of their various products. They introduced the ideas behind their ASIC designs. ASIC are application-specific integrated circuits which are not programmable, and are therefore less flexible in use than FPGA's and CRPB's. However, this reduction of flexibility enables a higher level of efficiency, which is very important for the telecommunication applications that Raycom designs using the ASIC technology.

The telephone systems connecting customers to the local sub centres are typically constructed as a tree-like structure, each sub-centre covering tens of thousands of connections. The communication between various sub-centres is generally organized as a star-like structure. Since these communication systems operate on different bitrates, special chips are required to convert the various data streams. Raycom neatly fills in this Chinese niche. Among their products, protocol converter chips are part of Raycom's research. Raycom has created chips which are capable of encapsulating Ethernet (LAN) into E1 (voice transmission protocol) data. These chips are required for low cost signal transport between telephone sub-centres. As individual signal transports between various sub-centres are expensive, these Ethernet signals need to be merged into a single or multiple (Raycom's chips are capable of processing up to eight of these channels) E1 signals.

Also, the SDH and PDH bridge chips are used in digital transmission systems to multiplex multiple signals with a low bit-rate (Ethernet) into a single signal with a high bit-rate (E1). Furthermore, these chips are also able to reverse multiplex, i.e.



extracting the individual Ethernet signals from the E1 carrier signal. Capable of processing high frequency (digital-to-optical) signals, SDH will outdate the traditional PDH chips within several years when communication systems are steadily updated. The typical ASIC development time ranges from one to two years.
Unfortunately, time marches on and it was about time to say goodbye to our recently gained friends. As there was still some room for a few informal discussions, some of the participants took the chance to increase their knowledge. With the exchange of gifts the farewell reached its culmination point: Raycom proved itself to be very generous. We really appreciated their daylong care and kindness! Raycom is a very friendly, pleasant and interesting company we absolutely enjoyed visiting.

Back at the hostel we fell back to a relaxing pace, switching our suits for more casual clothing and slowly preparing for dinner. As usual now, several groups were formed, each interested in a particular taste. Having experienced the Chinese food for some time now, a group of about 15 participants boldly decided to visit the Japanese restaurant located at Xizhimenwai Dajie. In an attempt to show their Japanese conversational skills, two of us attempted to order in their supposedly native language; alas, in vain. Since English wasn't mastered by the waitresses either, we again needed to fall back on Jason. After a chaotic order, which we had to pay for in advance, we finally could enjoy some good food, beer and sake. We completed our meal with a not so tasteful ice cream at the nearby McDonald's. Along Xizhimenwai Dajie, next to the Seasail Bar we visited the day before, one can find the Focus Bar. Being even more extravagant, we decided we definitely should go and try. Paying a 20 yuán (~2 euros) entrance fee, we sat ourselves at the most prominent spot: at the bar right in front of the stage, which were interconnected. At the other side of the bar waitresses tried to entertain us by playing a 'how to get stupid strangers to buy more beer' game using dice, trying to brand us with a cigarette and hitting us with some plastic hands. Completely nuts, I'd say.

The restroom was an experience in itself. When you found yourself relieving internal fluids, a Chinese man would start to massage you out of the blue. Continuing his bone-crushing work while you made your way to the sink, he offered towels and pretty smelling soaps. But even in China nothing comes for free as we were subtly suggested to donate to such a kind young man. Late in the evening (around 11 P.M.) we were surprised by some performance acts. Local Kung Fu artists showed their martial skills, dancers did their thing, an acrobatic man was standing solely on his head while singing a song, and a real entertainer was telling jokes, sang songs, and drunk a lot of beer. Once he discovered our Dutch origin, we had a feeling he was making fun of us (in Chinese of course). Singing along "We are the champions" we extremely enjoyed ourselves, delaying our time of departure over

and over again.
Finally, around 00:45, we headed home fully aroused by the superb evening we experienced. In retrospect, the entire day was one great experience: from the visit to the kind, interesting hardware design company Raycom until the late-night party in one of Beijing's many Western-influenced bars. Undoubtedly, I'll cherish it as one of the best days during the tour. ☯

## Day 8: Thursday, April 21st
## Huairou Solar Observatory Station

*By Else Starkenburg*

At 7 a.m. my alarm clock reminds me and the rest of the room that it is already time to get out of bed again. The day then starts with a 'Western breakfast' with white bread and eggs. At 9 a.m. we are all standing in front of our bus, ready for an almost two hour drive to the Huairou Solar Observatory. Unfortunately, Bernadette is not feeling well today and isn't able to join us. We have to say goodbye to her at the bus stop, hoping that she will feel much better after taking a full day's rest.

Fortunately we don't have to find the way to the observatory all by ourselves, our guide Gao Yu already joins us in Beijing to show us the way. As the trip proceeds, we more and more appreciate his help as the roads are getting more and more narrow. This is our first time far outside of the city of Beijing and some people get really excited when they see a part of the Great Wall that runs over the mountains. In the small villages that we pass, our bus driver has a hard job avoiding all kinds of pillars of bricks in the middle of the road. He gets a well-deserved applause from all of us for his efforts.

Finally, after a one and a half hour drive, we reach the observatory, which is beautifully situated between the mountains at the bank of a lake. The weather is really beautiful today and we are enjoying the view of this all for a moment. Inside the observatory we are welcomed by Dr. Shudong Bao, Dr. Bo Peng and two students. Dr. Shudong Bao is the operational director of the solar observatory, and in his presentation he gives a lot of information on the history and activities of this observatory. Huairou Solar Observatory Station is situated 60 kilometres Northeast of Beijing and was originally built in 1984. The particular site of the observatory was chosen because of the excellent sight. Under the leadership of Professor Ai Guoxing the first telescope of the observatory, a simple dual-wavelength telescope, was converted into a multi-channel telescope, with which the sun can be observed in many different wavelengths. On the site of the observatory there are also several radio telescopes and there are even plans to build another new telescope. Most of the buildings we see now on the terrain are quite new. Reason for this is that the expanding of the observatory was more difficult a few years ago, since there was no road leading to the observatory before 1996. Even now, new buildings are still being built. Besides observations at

different wavelengths, a special interest is taken in measuring magnetic and velocity fields of the surface of the sun, both of which we get to see nice figures of during the presentation. We also learn that Huairou Solar Observatory has been involved in several worldwide projects concerning solar observations, including the round-the-clock observations of the sun in 1987.

After being informed of the most important details of the solar observatory, Dr. Bo Peng from the National Astronomical Observatories, Chinese Academy of Sciences (NAOC) tells us about the observational astronomy in China. In the first part of his presentation, Dr. Peng shows us the most important telescopes in China. The second part is not devoted to the present, but to the future. As Dr. Bo Peng indicates, radio astronomy is a very important part of modern astronomy and it is still a very promising field of research for future discoveries. The Chinese astronomy will make its distribution to the future radio astronomy in a project called KARST (Kilometre square Area Radio Synthesis Telescope). Part of the project is to build a telescope with a dish of 500 metres in diameter. Unfortunately there is no undercarriage that will support such a large, and thus very heavy, dish. The solution lies in the landscape of China itself. At some sites nature itself has provided the Chinese with valleys which have almost the desired shape of a telescope dish. This of course does not solve all the problems directly, as Dr. Bo Peng points out there are still a lot of problems with the construction. For instance, it is really hard to keep the focus in its place. Although it is tough, none of these problems will stop the construction of the world's largest radio telescope in one piece, according to Dr. Peng. After having had a delicious lunch we go outside to see the telescopes of the Huairou Solar Observatory. Although we are very impressed by the telescope, the view from the site of the telescope is even better.

We're told by our guide that the optical telescope can use nine filters at the same time. We conclude our day at the observatory in the game room, relaxing and playing games for a while and then we go back by bus to our hostel. There we fortunately find that Bernadette is feeling much better and she joins us for dinner in our favourite restaurant. Because a lot of people told me, being the only astronomy student of the group, that this day would probably be 'my day' and that they were not sure if they would like it at all, I was very pleased to hear from a lot of fellow students that they really enjoyed seeing the observatory and the talks given. At the end it turned out to be not only 'my day', luckily for me, because I really liked sharing it! ☯

## Day 9: Friday, April 22nd
## Intel China Research Centre

*By Ewoud Werkman*

Around 6:30 A.M. our alarm clock rang. Today we would visit Intel China Research Centre, which is located in the Haidian district

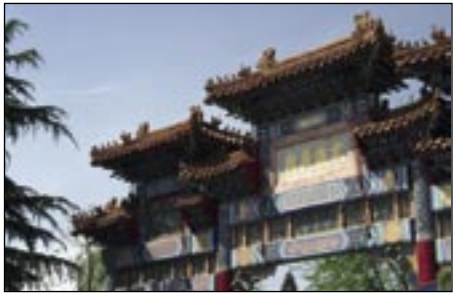
in Beijing. After a toast 'n' egg breakfast, a 45 minute drive took us to Intel. We were received by Shaw-Hua Ger, the operation manager at ICRC. After we were badged, we were taken to the BUM-room, the Business Update Room, for an overview of the activities at ICRC by Wenwu Zhu, the Lab director of ICRC. Intel has two research facilities in China. The first facility was founded 1985, the Beijing facility was opened in 1998. There are more than 4.000 employees of Intel working in China. ICRC, with a staff of about 80 researchers, focuses on applied research for three to seven years in the future. It is divided in three research labs: Microprocessor Technology Lab (MTL), Communication Technology Lab (CTL) and the System Technology Lab (STL). Furthermore they have some local support that focuses on, for example, the University Research Program Sponsoring, which is a long-term strategic program in collaboration with the universities in China. Intel capital is used to support new start-ups in China. The System Technology Lab focuses on technology for Intel's future IC products and conducts research on, for example, (hardware) security and malware protection, remote diagnostics and software distribution. After the introduction, Mr. Zhu held an in-depth speech about the Communication Technology Lab that focuses on Wireless communication (WiMAX) and Network performance of many core server platforms. WiMAX is Intel's vision in which they foresee "Anytime Anywhere Access". WiMAX is an implementation of the IEEE 802.16 standard and provides the missing link for the 'last mile' connection in metropolitan area networks (MAN) where DSL, Cable and other broadband access methods are not available or too expensive. Its range is a few miles and the transfer rate is around 35 Mbps. It operates in the 2-11 GHz band and will coexist with other protocols such as WiFi (2.4 GHz) and Bluetooth. This coexistence with other established protocols has Intel's main focus and they've just released the first chipset based on this standard. One of the problems with wireless communication is enhanced mobility, which is at a consumer's point of view a positive thing, but generates some trouble from a technological point of view. Walking around with your mobile device induces inter-carrier interference (ICI), and generates the well-known Doppler-effect. Orthogonal Frequency Division Multiplexing (OFDM) is used to take care of these problems. Furthermore, they focus on the use of multiple antennas for different wireless standards, synchronisation and channel estimation. Right now, they have a working prototype which lets you stack different boards that implement a certain wireless standard. In the future this will lead to a system that supports all wireless standards available now and can switch between these standards seamlessly.

At 10:30 a.m., we received a more in-depth speech about the Microprocessor Technology Lab by one of their researchers. This lab has two subgroups with 25 researchers. One focuses on architecture, the other on program systems. Intel envisions a multiple-core die in future architec-

tural design of microprocessors. Many cores lead to more sophisticated compilers which are developed at the program systems lab. They also focus on a home-made software stack that is based on Java. It specifically targets the XScale microprocessor architecture of Intel. Since gaming is one of the applications on products that embed an XScale microprocessor, a lot of performance testing is done by using and creating games using Intel's Java implementation. Other research includes a high level programming language: Shanhara, which speculates on what (threaded) code can be compiled in advance. After this talk, we were brought to the demo room to see some of Intel's research in real life. They showed us the project Stareast, which is a (six-node) mesh routing algorithm with automatic route recovery for wireless nodes. When one of the nodes was taken down, the algorithm automatically searched for another nearest node to communicate with to re-establish the connection, while in the mean time the connection between two endpoints would still work. Xin Zhou gave a demo of the previously mentioned Java virtual machine with a very small footprint. It showed that Java can be fast and smooth, even when it comes to animation and games. Another interesting technology was a field array microphone. Using several microphones in a row, the software could find out from which direction a person was speaking and was able to point a camera to that person.

After the demos we had a lab tour and visited the roof of the building with a magnificent view over Beijing. When we came back, American-style lunch was served with pizza and coke.

With a warm goodbye, our visit at Intel ended and our bus headed to the Lama temple. The Lama temple is the most famous temple in Beijing. Converted into a lamasery in 1744, it became a home for Mongolian and Tibetan monks. In 1792, Emperor Qianlong, having quelled an uprising in Tibet, instituted a new system with respect to the Dalai Lama (the leader of Tibet). The system consisted of two golden vases, one located in the Jokhang Temple in Lhasa and the other in this Lama Temple in Beijing. The first vase was used to determine the reincarnation of the Dalai Lama. The second vase was used for a lottery to determine the next Panchen Lama (the second greatest leader of Tibet). This made the Lama Temple an important factor in controlling the Tibetan minority. The temple consists of five main halls, each hall taller than the preceding one. The last hall is the biggest hall and houses a large eighteen meter high statue of the Maitreya Buddha, with is the Buddha of the future, better known as the laughing Buddha. It is sculpted from a single piece of sandalwood. Unfortunately, the rear of the temple was under construction (due to the Olympic Games in 2008) and we were unable to see the golden lots for the election of the next Panchen Lama. Around 4 p.m. everybody was free to go. A few wanted to go to the Zhongguancun area which is known for all the computer related shops. We walked into one of the shopping malls. It was quite interesting to see one big five-level shopping centre that only sells computer stuff. A few of us bought some



electronic parts, since the price of electronics is somewhat lower than in the Netherlands. Going back to the hostel was quite a challenge. It was hard to get a taxi near the Zhongguancun area. It took Jason and me more than an hour to get back to the hostel. But we were lucky: the other taxi lost its way and took even more time to get back at the hostel in time for the karaoke event that the committee had planned for the night. During our stay in Beijing we saw big signs of 'KTV' all around the city. This night was the moment to get familiar with this type of Chinese entertainment. Around 10 P.M. we arrived at the karaoke bar. Our group was brought to a big room with 200+ Watt loudspeakers, subwoofers, flat-screen television, nice couches and two microphones. Since the Chinese language is quite hard to learn, Chinese singing would be even harder for us. Luckily, Chinese people listen to a broad range of English songs, including Britney Spears, Westlife, ABBA and the Beatles. We had a lot of fun during the night, although not everybody was equipped with a pure voice. Happily the echo and delay functioned quite well when using the microphone, so even badly shaped voices sounded superb (at least my voice did...). Time flies when you're having fun and since we were going to climb the Great Wall the next day, the sound of sore throats diminished and everybody went back to catch some sleep. ☯

## Day 10: Saturday, April 23rd
## Great Wall

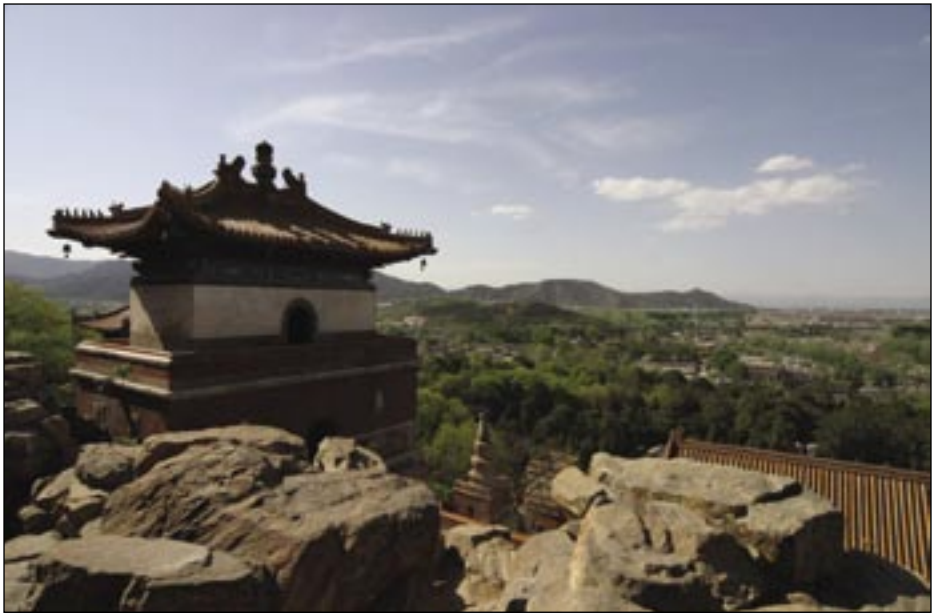
*By Martijn Bodewes*

On the tenth day it was finally time to visit the Great Wall. After ten days in China everybody was eager to visit the Great Wall. To get there from the hostel we had to make a two hour bus drive, so we got up at eight and left for the Wall at nine.

At eleven o'clock we arrived at a restaurant near the Great Wall. At the restaurant we had an early lunch. The lunch was, as usual, very good! It was obvious that 'western' civilisation is not as wide spread here as in Beijing. The toilets are less sophisticated (read: a hole in the ground).

From the restaurant it was a fifteen minute walk to the Wall. On the way over, we couldn't see the Wall until the last turn. After the last turn we had a great view of the Wall! What a sight! Now we only had to walk for a short while before we arrived at the starting point, a small gate from where the steep steps began. There, we started the ascent.

Some parts of the wall are really steep; you have to climb on all fours to get forward safely. The part we walked and climbed was partly renovated, although there were several parts on which we really had to climb. Despite the good shape this part of the wall was in, there were no other tourists! On top of a hill was a small watchtower site, where we paused for a while to realise where we were: on top of the Great Wall. That really was one of the highlights of the study tour.



After the Chinese Wall we went to a Mongolian restaurant for a traditional Mongolian dinner. Coen Groen was elected to perform an old ritual of sacrificing the meat. He had to bless the goat that we were about to eat. After the offering, the goat was cut and the meat was presented. The main delicacy was the head of the goat with its tong and brains. Not everybody liked the brain, it was quite "icky", but an experience to eat.

Later that evening, some of us went to The Mix, a club in Beijing. The next day was going to be an easy one so we were in for a party with the local inhabitants of Beijing. The style was very western, and after a great party we went back to the hostel to get a good night's sleep. ☯

## Day 11: Sunday, April 24th
## Summer Palace and Acrobatics Show

*By Wim Ottjes*

Breakfast started at nine so we could sleep until late- compared to the other days. This was necessary because many people went to the disco the day before. The program for the day was the Summer Palace (Yí hé yuán) and an acrobatics show.

Let me first tell something about the history of the Summer Palace: The Summer Palace has a history of 800 years. The imperial palace was called Golden Hill Palace in those days. In 1750 Emperor Qian Long of the Qing dynasty built the Garden of Clear Ripples (Qingyi Yuan) and renamed the hill to Longevity Hill, to celebrate the birthday of his mother. The construction took almost fifteen years. In 1860 most of the buildings were destroyed. The Anglo-French Allied Forces invaded Beijing and set the garden on fire. Empress Dowager Cixi renovated the palace in 1888, by (secretly) using the funds of the Imperial Navy. The renovation took ten years. After the liberation of China the palace was called The Summer Palace. But in 1900 the garden was plundered again, this time by the Eight Powers. Almost everything was destroyed. Only one big temple survived. But of course everything was rebuilt again. This began when Empress Dowager Cixi returned to Beijing in 1903.

The Summer Palace (300 hectares) can be divided into three parts: the administrative area, the residential area and the scenic area. The administrative area is near the East Palace Gate. Empress Dowager Cixi and Emperor Guangxu handled their state affairs there. The main building is the Hall of Benevolence and Longevity. To the west lies the residential area. Most buildings here were used as a residence for Empress Cixi and Emperor Guangxu. The main buildings here are the Hall of Jade Billows, Garden of Virtue and Harmony and Hall of Joyful Longevity. The third part, the scenic area, is on the left of the East Palace Gate. It consists mainly of Kunming Lake, which, with 220 hectares, covers two thirds of the Summer Palace. The lake is divided into three parts: the main Kunming Lake, the West Lake and the Back Lake. Dykes and causeways separate the

parts. It was said that in the Qing dynasty, Emperor Qian Long and Empress Dowager Cixi used to train their navy in the lake. To the north of the lake lies the Longevity Hill, which is about 60 metres high.

Like everybody else, my day at the Summer Palace was very relaxed. With some others I first went to Kunming Lake. Unfortunately we couldn't rent a boat, because the wind was too strong. So we went on and climbed the Longevity Hill. There was a very nice view over the lake and the city of Beijing. We wandered around on the top of the hill and visited a temple.

It was already noon by this time so we went to get some lunch. There was no free table inside the restaurant so we took our food outside and sat there and ate our lunch. While enjoying our lunch, a lot of Chinese people were looking and pointing at us. Later we heard that it isn't usual to eat outside. After this we took a little walk and admired the marble boat. When we encountered a small teahouse, we went inside. We saw how a little artificial flower in a glass thrives when hot water was poured onto it. It looks very nice, and also serves as a good gift.

Sitting on the balcony with some tea was very relaxing. After this we walked a part of the Long Corridor. There wasn't enough time to walk the whole corridor so the first part of the program came to an end. We went to an Indian restaurant by bus, near the Drum Tower. Without doubt, the food was very nice, but most people found it too spicy. But what else could we expect from an Indian restaurant?

The last thing on the program for today was an acrobatics show, in the Sky Earth Theatre. Here we saw some amazing tricks. They started doing tricks with the diabolo. They even continued the tricks while jumping and rolling. After this, girls with dishes did their tricks. Some even with eight dishes at once. And of course there were some balancing acts. Also, there were some guys jumping through rings, multiple rings at the same time, and even rotating rings. For their grand final they jumped through rings at a height of two meters. For the last part of the show they used a bicycle. First, they did some simple tricks, but they ended up with twelve people on one bicycle. With this act the show ended and we made our way home. This was very easy because the bus took us to the hostel. After that some people went to drink a beer in the living room of the hostel. ☯

## Day 12: Monday, April 25th
### ICCAS and ISCAS

*By Niels Maneschijn*

We started the day with our usual routine: sleeping through the alarm clock at 6 A.M., waking up by another alarm clock at 6:20 A.M., breakfast from seven to eight. We arrived at the Chinese Academy of Sciences (CAS) on schedule: nine o'clock, under a clear blue sky. The CAS

is a large organisation hosting 50.000 scientists and 90 research institutes, amongst which ICCAS and ISCAS. Our first visit was to the Institute of Chemistry of the CAS, ICCAS for short. Professor Zhang Deqing gave us an introduction. The institute is mostly working on polymers. It is specialised in conducting polymers and the use of fullerenes, for example, for localised drug delivery and carbon nanofilm FETs. After the introduction, Ms. Fang took us to the Key Lab of Molecular Nanostructures. This is a twenty year old lab, and was involved in the invention of the Scanning Probe Microscope and the synthesis of nanostructures. Current research areas include self-assembling molecules, changing molecule properties by applying light or voltage, magnetic properties of carbon nanotubes, cell signalling and protein interaction. The lab has a lot of experience in the synthesis of fullerenes, which can be used in nanodevices, in quantum computing and as an MRI contrast agent.

We took a tour through the lab, passed the clean room, student work places, several microscopes, the fullerene synthesis lab, and also the demo lab of the Nanotechnology Centre. After this lab tour, Professor Zhang took over and gave us some poster presentations on more research areas being covered. These include light emitting polymers, carbon nanotube superconductors, catalysing behaviour of polymers, information storage in polymers and FETs using organic semiconductors. Interesting were the hydrophobic material made by adding carbon nanotubes to polymers, and a material which is either hydrophobic or hydrophilic, depending on temperature. Also intriguing were the organic solar cells, on which no details were given since a patent application was pending. After a short peek at the Scanning Electron Microscope and the IR spectrometer, we were offered a real Chinese takeaway lunch, which proved interesting, especially the soy milk. Also, Ruben's birthday was celebrated.

Before we were expected at the ISCAS (Institute of Software), we had some time to kill, so we were lead into a luxurious relaxing room, where we could have some tea or could take a nap. This possibility was enthusiastically received. The ISCAS research focus is on basic computing science, information security and systems and software engineering. Research is also being done on Red Flag Linux (a Chinese Linux distribution), human computer interaction and multimedia. After our welcome, we were given a presentation by Kuiyu Li, who pointed out the difference between computer graphics and virtual reality. He showed us some examples of computer graphics created at the ISCAS, most notably an impressive simulation of textile texture. Also, we were shown demos of the use of incremental horizons, image based rendering, and real time physics simulation on a graphics processor (GPU)! Before we went on our way to the Intelligence Engineering Lab (IEL), we took a quick lab tour, and had a small discussion on the subject of the used integration method in physical modelling. At the IEL, we saw a demonstration of a newly developed pen inter-

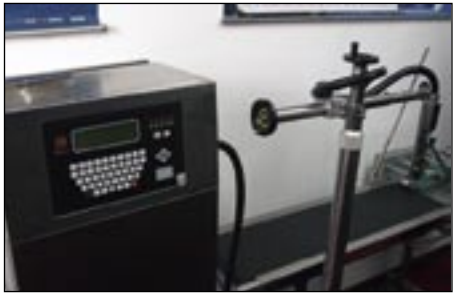
face, intended for use in the educational system. The interface is able to recognise formulae, italics and continuous writing. It analyses semantics to facilitate the use of form input. This is used to make a calculator that recognises formulae and renders them to textbook output. Another application is an educational program for children. Its goal is to stimulate creativity and interest in learning. Composing a tune rewards drawing and writing of numbers and characters. This interface is not meant to totally replace the keyboard and mouse, but as a complement. It will be available as a set of C++ libraries for gesture and formulae recognition, working for Chinese and western characters. We took a quick tour of the department, seeing the development of a more customisable web search engine, and support for Mongolian (top-to-bottom) and Varsi (right to left) type with the ability to join successive characters. This is not available in Microsoft products, but it will be in Red Flag Linux.

Our last stop was SKLOIS, the State Key Laboratory of Information Security, where Professor Ling gave us a brief overview of their activities. These include study of cryptography, security protocols, information countermeasures and network and system research. Products, like intrusion detection systems, firewalls and vulnerability scanners, are not yet being sold, but they will be in the future. After our visit, we took the bus back to Xindadu, our home away from home, where we arrived around five. Most people went for dinner in the neighbourhood of the hostel, before spending the rest of the evening with a little rest and relaxation. ☯

## Day 13: Tuesday, April 26th
## Kenuohua and Beijing Zoo

*By Bernadette Kruijver*

In the morning we visited Beijing Kenuohua Electronic Technology Co. When the company was established in 1996, it was the first company specialised in Continuous Inkjet Printing (CIJ-printing) in China. Kenuohua was founded by Mr. Xiuchuan Zhang. Mr. Xiuchuan Zhang graduated in 1983 from Beijing University of Aeronautics & Astronautics. Five years later, in 1988, he obtained his master's degree in the Third Academy of the Ministry of Aerospace Industry. Nevertheless, he decided he was not going to not become an astronaut and started to study the inkjet technology. In 1994 he acquired the patent of CIJ printing from the Chinese authorities and after two years he founded his own company in CIJ printing. Up till now, Kenuohua has been market leader in this field. The company has more than 200 employees and over 40 branches in China. Furthermore, Kenuohua distributes its products in the United States of America, Canada, Australia, Thailand, Malaysia India, Sri Lanka and the United Arab Emirates. The printers of Kenuohua are developed for the packaging industry. For example, they are used to print the expiry date on medicines, the batch number on a box of biscuits, or the maximum current on a cable. Printing on all those different



kinds of surfaces requires special inks. Kenuohua develops these inks too. All Kenuohua printers use a CIJ printing technology. Inkjet is a non-impact dot-matrix printing technology in which droplets of ink are jetted from a small aperture directly to a specified position on a medium to create an image. In the early 1960's, Dr. Sweet of Stanford University demonstrated that when you apply a pressure wave pattern to a small aperture, the ink stream can be broken into droplets of uniform size and spacing. When the individual drops are formed, you can give the drops an electrical charge selectively. The figure below is a schematic illustration of a CIJ printing system.

Each drop has an individual electrical charge and can be deflected at a specific angle by the applied electric field. This deflection determines on which height on the paper the drop will end. Sometimes you would like to have a white spacing instead of a dot. In that case the drop should not be deflected by the applied field and just goes right into the gutter to be recycled. This type of CIJ printing is a so-called multiple deflection system, because all drops are differently electrically charged and can be deflected at various angles. This in contrast to a binary deflection system, where the droplets are simply charged or uncharged. Then you can just choose to deflect a drop at one certain angle or not at all (and let it go into the gutter). Kenuohua uses the multiple deflection system.

Twenty employees work at the Kenuohua research centre. They develop the inks for all the different surfaces on which Kenuohua can print. Besides that they design software, that is used to integrate internet services into the printers and to print Persian and Arabic characters.

After our visit to Kenuohua, we had lunch together at one of our favourite restaurants nearby the hostel. All nice and tasty Chinese dishes were ordered for us, including the yellow chicken with lemon and Peking duck. After all this delicious food we walked to the zoo of Beijing. The zoo was established almost one hundred years ago under the name: ´Ten Thousand Animal Garden´. But in 1955 the name was changed to ´Beijing Zoo´. The zoo covers more than 50.000 square meters and has a collection of more than 600 species of animals. Beijing Zoo mainly exhibits wild and rare animals living in China, such as the panda bear and the Golden Monkey. Also, it boasts many rare animals from all around the world, such as white bears from the North Pole, kangaroos from Australia and zebras from Africa. These animals are often gifts from the heads of states. The zoo in Beijing differs slightly from the Dutch zoos. Of course, the buildings and the plants are different and they have some other animals. But the most important difference is the size of the cages. The panda bear in Beijing Zoo can live like a king, but all other animals have very small cages, while the panda bear does not even try to walk around. This very lazy animal just sits and eats all day. At the end of the afternoon we said farewell to the animals and split into small groups to go for dinner, a very tasty dinner as always in Beijing. ☯

## Day 14: Wednesday, April 27th
## China Institute of Atomic Energy and Stone Flower Caves

*By Thijs Hollink*

At 8:30 a.m., our bus left the hostel to go to the Chinese Institute of Atomic Energy (CIAE) near Beijing. We arrived at 9:30 a.m. and got a tour from Mr. Wang. He showed us a small exposition with posters and parts of machinery. Thereafter, he led us to the tandem accelerator control room. Mr. Wang explained that an ion source is used to produce 500 keV negative ions for the accelerator. Halfway the accelerator, a thin foil is placed that strips the ion until it is positively charged, to accelerate it even more without the need to use extra voltage. After the control room we looked at the accelerator itself, a huge apparatus. The accelerator is used for a lot of experiments, ranging from Accelerator Mass Spectroscopy to nuclear structure research, to investigate the effects of cosmic rays on space ship parts. Some of these set-ups were shown to us after the accelerator.

After the tour there was a seminar at the conference room. First Mr. Wang held a short introduction. After that, Anna, the delegate of the committee, shortly explained to the CIAE staff what we had already seen in Beijing and what we were going to do during the remainder of our stay in Beijing. Then Mr. Liu held a talk about the research on nuclear and particle physics in China. He explained that nuclear physics was mainly done by CIAE and the Institute of Modern Physics at CAS, and that particle physics was done by CIAE and the Institute of High Energy Physics at CAS. The nuclear physics department of CIAE is doing research on neutron scattering, AMS, radiation physics and neutron activation. In the future CIAE will try to produce and accelerate radioactive isotopes by using a cyclotron to feed the tandem accelerator.

After Mr. Liu, Mr. Xia explained about one of the main research fields of CIAE, so-called ADS. ADS, short for Accelerator Driven System, is a method of producing energy from radioactive material that is currently considered as waste. After Mr. Liu's talk, Ymkje Huismans and I gave a talk about the Kernfysisch Versneller Instituut (KVI) in Groningen, and especially focused on the projects we did there. Ymkje did her research on simulation of the interaction of solar wind with cometary clouds in order to measure the solar wind velocity by observing comets. I talked about my project on the measurement of $^{41}$Ca-atoms in natural samples, a technique that in the future can be used to date archaeological materials.

After the seminar we had lunch together with some staff members of CIAE, after which we visited the Stone Flower Caves nearby the CIAE. Unfortunately, the guide of the caves did not speak any English, so Jason translated what she said. Continuously hearing 'Mind the steps' and 'Mind your head' almost drove us crazy. There were bright lights in all corners of the caves, which made the appearance of the caves much

less natural.
We had quite a long walk in the caves, it took us about one and a half hour, and it was very hot and moist. We left at 16:15 and were back at the hostel at 18:00. A small group of us decided to go and try 'hot pot', a traditional Beijing type of food. On the table were small bowls of boiling water with vegetables and mushrooms, and dishes with small pieces of meat, fish and vegetables were served that we could boil in the water. One problem was that there was nobody in the restaurant that spoke English, nor were there any English words on the menu card. With a lot of gestures and pointing out words in our dictionary, we managed to order some kinds of meat, fish and vegetables. Despite the language problems we had quite a nice meal.
Later that evening, the tailor came by our hostel. A number of people, including myself, had ordered tailor-made suits, and this evening she brought the suits she had made for us. They were all quite good, apart from a few loose buttons and some trousers that were too loose and had to be made tighter. Apart from this we were all satisfied, because how often do you get the chance to buy a tailor-made suit for about €80? ☯

## Day 15: Thursday, April 28th
## Dutch Embassy and Ricoh

*By Feike Kramer*

On our last scientific day in Beijing, we visited the Dutch embassy and the Ricoh Software Research Centre. At the embassy we were welcomed with real Dutch coffee and cookies. After everybody got coffee, Mr. Eric van Kooij held a presentation about the technical scientific comparison between China and The Netherlands. After this presentation there was an interesting discussion. China is politically, economically and technologically important. The hot topics of Chinese politicians, who are mostly scientists, are human rights and environmental problems. Also, regional influences and tensions are recent topics. In global politics, China is just too big to ignore. Economically, China is important because of a number of reasons. First of all, China has a very fast growing economy. The European Union is the most important trade partner of China and there have been a lot of investments in China. After Germany, The Netherlands is the second largest investor from the EU. The main reason to invest in China is the inexpensive labour. In spite of the fact that productivity is relatively low, the Chinese workers have a good attitude and make long working days. In the future, the relatively high unemployment, the environmental problems, the domestic market and the large income differences are some challenging topics to solve. Another problem is the failure of recognition of intellectual property. A lot of products are copied, but the government doesn't actively discourage this. Some people call this 'the growth model': by ignoring problems that rather stimulate the economy, the government enables a high economic growth. Technologically speaking, China has always been progressive. The enormous economic growth causes

more investments in research and development. Compared to the Netherlands, there is relatively more invested by the government than by companies. There is also more investment in product development than in fundamental research. The reason for this is that China has more production than research and development. Some consequences of the communism with its planned economy are hidden unemployment, but the attitude of the Chinese students as well. They study hard, but are commonly not used to being creative and innovative.

After this interesting visit, the trip continued at Ricoh Software Research Center Beijing (SRCB). Director of R&D Dong Yang welcomed us and presented a short introduction on Ricoh. Ricoh SRCB was established in February 2004 in the Zhongguancun area of Beijing, and the office we visited is Ricoh's first software R&D Company in China. Ricoh's business domain is office automation, focusing on document solutions. Interesting is the direction towards the mobile office. Their target within the mobile office is to make intelligent systems, such that individuals can work anytime and anywhere with improvements in productivity and knowledge creation. Ricoh has research labs in the US, Japan, Germany and China. At Ricoh SRCB 27 researchers are working in different areas. They are working according to a spiral R&D process: from China-specific research (for example e-government solutions), to basic research (for example image processing), to requirement analysis and case studies (document management systems) to China-specific research again. The different research groups of Ricoh SRCB are the Document Workflow Group, the Image Security Technology Group, the Document Image Analysis group, the System Solution group, the Application Solution group, the TRMeister Group, the MPMeister group and the Ubiqitous Collaboration group.

After these presentations, we got several demos of current research at the different research groups. The first demo at the Image Security group was about watermarking images. With this technique photos can be protected for illegal copying or re-use. Normally the watermark is not visible, but when the image is printed or copied, the watermark will be become visible making the photo useless. Next we saw some research on the multifunctional printer (MFP). This research consists of predicting the image quality and carrying out a defect diagnosis. By doing this, the quality of the MFP will increase in the future. Page segmentation and character segmentation were subject of the demo at the Document Image Analysis group. Scanning a document will result in an image, but most times it is better to save the document as separate text with the different images or to save a certain text style, like a table. Therefore it is necessary to recognise the different areas on a page. This is called page segmentation. Furthermore, it should be possible to recognise the different characters, which is called character segmentation. Other demos were about a multimedia content management

system, full-text search engine TRMeister and the so-called Document Highway. The Document Highway is an architecture where data can be utilised and managed more smoothly. Even with multiple operating systems, input and output, transmission, storage, and retrieval of data can be handled seamlessly and systems can be easily expanded. Efficient document management facilitates workflow and helps to lower the total cost of ownership for customers.

After the demos we had a last talk with Ricoh, in which we thanked Ricoh for our visit. Today's scientific program was finished, so everyone could do whatever he or she wanted. Many of us spent the last evening in the nightlife of Beijing, together with some Chinese students from Peking University, to say goodbye to Beijing and China in an appropriate way. ☯

## Day 16: Friday, April 29th
## Leaving for Kuala Lumpur

*By Joris Kampman*

It must be a good thing that our group consisted of only Engineering and Computer Science students that are intelligent and opinionated, otherwise it would have gone completely wrong. Packing 27 suitcases together with 27 people on a bus took us only 29.5 minutes with the help of – at least – 20 of those highly intelligent students. It could only have been a total disaster if, instead of intellectual science students, 'normal' people would have been confronted with this suitcase-challenge. But the wisely chosen option of utter packing chaos and screaming from the back of the bus how to pack people and luggage eventually worked out and we were off to the airport. A few last pictures were taken with Jason, Candy and Tony, and Tony gave us all a disk with short films and photographs he had been shooting for the past two weeks.

On the bus to the airport (it was at that time about 12 A.M.) everyone looked – despite the possibility of catching a few extra hours of sleep in the morning – tired. Which in itself is not hard to imagine, because the last Beijing night ended for most people on various dance floors all over Beijing and for one person on a reasonably romantic park bench in weak mood lighting, while whispering more-than-friendly words in a Chinese ear. Interrogation tactics and amateur psychology proved to be no match for the shielding put up by the not-alone park bench sitter, and thus explicit information about the park events the night before can – unfortunately – not be given in this report.

We arrived early at the check-in counter, which meant that there was time enough for Georg to put on his comfortable three-piece suit for the coming six hour flight. Reasons for this mind lapse were found in the abundance of luggage he had, and the crooked reasoning that led him to believe that putting on his suit would make things better. That only three kilos too many is not a problem and that some of us had more that

seven kilos too many (and refused to put on their suits) did not deter this convinced person from his it-looks-good-on-paper plan. After a stewardess convinced us that a group check-in would be the thing to do for a group our size, which led us into the second chaotic experience of the day, the dressed-for-comfort group members and Georg could board the plane to Kuala Lumpur (KL). The flight was nice and smooth, and six hours later we landed in KL. There is not much to tell about this flight except that various desired drinks were mysteriously unavailable. Not that this was a problem for me, but my neighbour looked like he could use a drink after undressing looks and sexually aggressive body stances by a few middle-aged women who sat in front of us. So red wine was the next best option, unfortunately the – lets call them spirited – women in front of us were also experienced drinkers, so the wine option slowly dried out. But all in all it was a nice flight.

Arrival was around midnight at KL airport. After we bypassed customs at the hand of a security guard (this group check-in might have something to do with it), we stepped into a wall of heat when we came outside the air-conditioned building. It was about 27 degrees, and humidity was over 90 percent. But there was a big bus waiting for us, with air-conditioning and big reclining seats. After sitting in a bus made for Chinese people with Chinese measurements for two weeks, this was a nice surprise. Bastiaan, Feike and I settled in the back seats of the bus (that just happened to have the most leg space, a coincidence of course), but we were a little shocked and disappointed that there was no small fridge and personal video screen near to our seats. Also a men's and women's bathroom was nowhere to be seen on the bus. Too bad, but a nice bus altogether.

After arriving at the Pondok lodge in KL, we put our stuff in our room. A look around the area gave us the idea that the KL district we were in was one of the richest of KL. The so called 'Golden Triangle' of KL is the business district with high buildings, higher buildings and the Petronas Twin Towers. From the roof terrace we had a fantastic view of the district. However, stomachs were starting to act up and we were all quite hungry. By now, it was far past midnight, but that's no problem in a culture that has to deal with extreme heat during sunshine hours: there was an abundance of shops that are opened 24 hours a day, a lot of bars and restaurants where smells of roasted meat still arise from and there were lots of people in the streets. So it was decided that a walk around the district would be necessary because no one had any Malaysian currency yet. After we found a bank with a cash machine that actually worked, we had to let a few local, sharply dressed women down who – with subtle seduction tricks and the shouting of not to be misinterpreted compliments – wanted a night of sweet loving from apparently all of us. With this experience and a few beers, our first Malaysian night ended. ☯

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- bezoekers te woord staan
- toezicht houden op de gang van zaken
- meewerken in de bedrijfshulpverlening
- innemen van boeken
- uitvoeren van overige werkzaamheden

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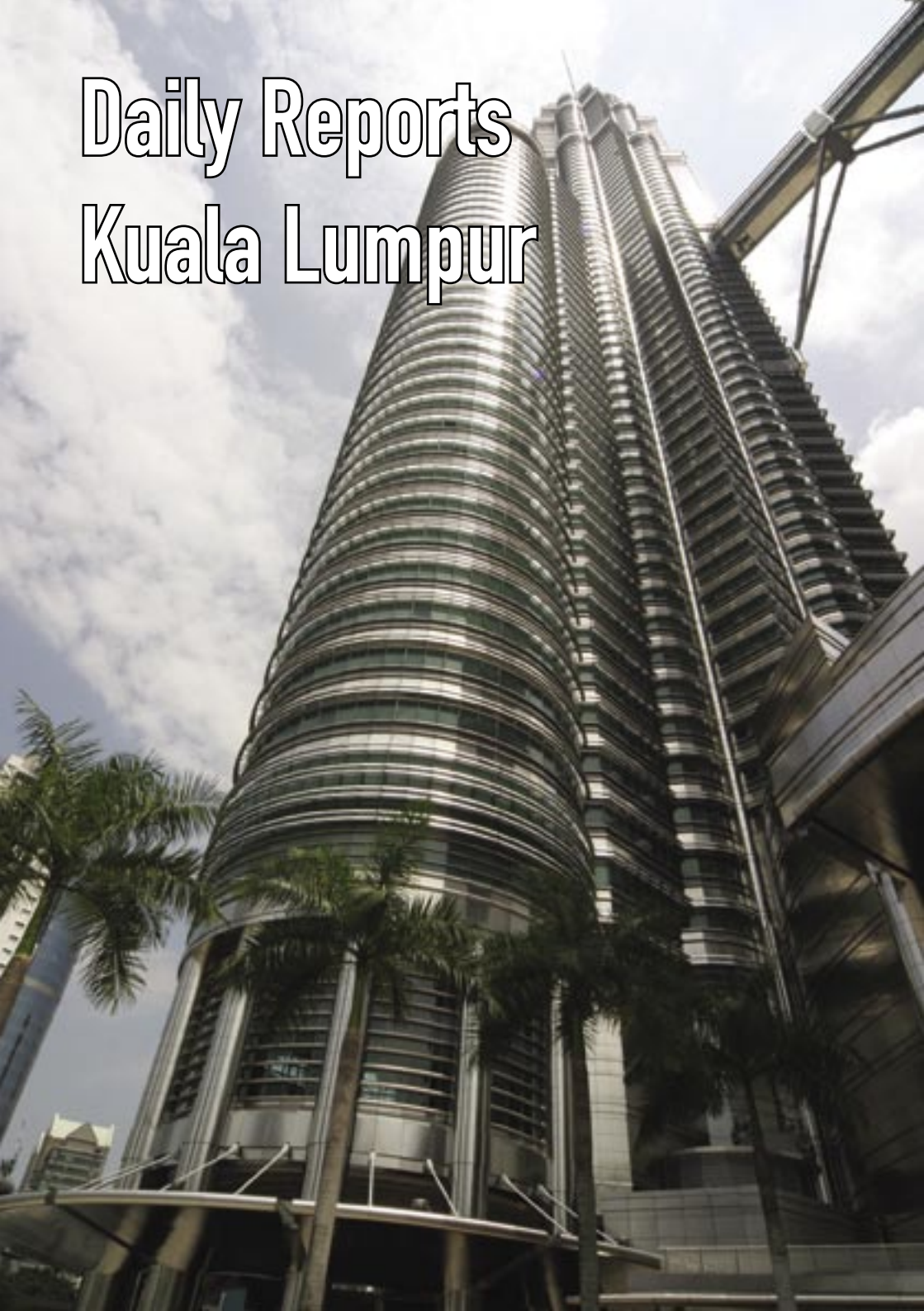
# Daily Reports
# Kuala Lumpur



## Day 17: Saturday 3, April 30th Cultural in Kuala Lumpur

*By Ruben van der Hulst*

This day it was up to me to write a little bit for the final report and behold: the result is shown below. Like every day we got up and had a delicious breakfast with two pieces of toasted white bread, a banana, a piece of cake, jam, butter and a mug of tea or coffee. This breakfast was very, very good compared to the breakfast in China. After breakfast, we gathered in front of the hostel and before we took off, our national anthem, "The Wilhelmus", was sung to celebrate Queen's day. But despite all our efforts, it did not sound like a tribute to the queen...

We took off for a walk (I did not understand why, because we could also use our luxurious, air-conditioned bus) to the Petronas Twin Towers. This was quite a strenuous walk, especially because we were not fully acclimatised yet and we were sweating like a fountain (odd comparison, but I think you can imagine). For your information: the Petronas Twin Towers are pointing in the direction of the National Bank and are built in the shape of an eight-pointed star (ideology for the 'fourness' of nature: North, South, East and West, earth, air, fire and water (no heart here indeed), hot, cold, dry and humid). They are 452 meters and 88 stories high and with this height they are the highest twin towers in the world. The maximum amplitude of this system is 0.75 meters and has 214.000 square metres of floor space. With the tickets that Raj had arranged, we could go up the tower! Being just a normal tourist, you can't go up all the way, but only to the sky bridge at a height of 170 metres (41 stories). First we were X-rayed to determine whether we were not bloody terrorists with bombs instead of bloody tourists, whereupon we went into the elevator. In this elevator there was an enormous amount of LEDs (this trip I learned this is a really astonishing experience that for computer scientists, over and over again); 84 times 3 = 252 to be precise. The lift operator told us that we were in a high speed elevator that moved up and down with a speed of 1 second per floor (a strange entity...). On the sky bridge it was very cold, with the advantage that our sweat dried very quickly. From the sky bridge the amazing skyline of KL showed up with a lot of exotic buildings. After the Petronas Twin Towers, the adventure continued with a walk to the Masjid Jamek mosque. All the trees and plants, most of which I had never seen, were very beautiful .

In the meanwhile we had a break to have lunch. Joris, Feike, Bastiaan, Georg, the guide (Ravi) and I settled down in a very vague, restaurant-like thing. Here, double G (Georg) got hot liquid poured over his back, causing semi-severe injury and a loud scream (I hope it has healed by now, GG!). After eating something that looked like noodle soup, we continued our walk and we crossed the Merdaka Square. This is a beautiful green lawn where in former days and even now cricket is played. Along this square were many nice buildings, like the National Museum, The

KL Library, the Textile Museum, the Selangor Royal Club and the Sultan Abdul Samad Building.

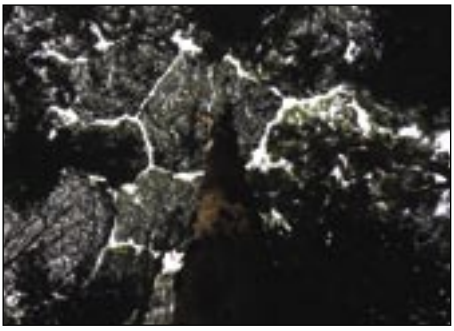
Before entering the Masjid Jamek KL Mosque (founded in 1909, one of the oldest mosques in KL), the women - unfortunately for them, and to great hilarity for us men - had to put on nice, warm cloths. The mosque was not very special and consisted mostly of praying areas where people sleep and send text messages with their phones if it is not praying time. Because of the heat, the mandatory program was cancelled. Joris, Bastiaan, Feike, Anna and I went to the Pasar Minggu with the Light Rail Transit. There we sat down in some place to eat. Actually we wanted to go to an air-conditioned restaurant, but after searching without finding, our belly conquered our brains. We had some nice chicken (KFC), hot rice and green vegetables, which would give me, as would become clear the next morning, green excrements. In the meantime, we drank fresh juices of watermelons and pineapples (no ice please). After this dinner, we went to the market. But this turned out to be a bit of a disappointment: the market was very, very small, and there was only food and a lot of rubbish that could be bought. After five minutes we decided that we would head to another market, which we had seen on our tour in the afternoon. Here we bought a lot of rubbish, as tourists are supposed to do.

After this shopping, we went to drink a beer: Club Liquid was the place. It looked 'super trendy' (a bit like the '&ZO', a popular discotheque in our hometown Groningen) and the most beautiful women were present. After a while, some things were beginning to look 'strange': the bartenders were wearing pink hats, there were only men sitting in pairs of two at the tables and the toilets were lit with pink light. We looked up this club in the Lonely Planet and there it was! Club Liquid was (especially the dancing room one story higher) one of the trendiest gay bars of KL! Here we made the appointment to go to the Golden Arm (a gay bar in our hometown Groningen) when we would have returned home (I wonder if this will ever happen). After a couple of beers, we headed home and went to bed. Ciao! C

## Day 18: Sunday, May 1st
## Forest Reserve Institute Malaysia and Batu Caves

*By Sietze van Buuren*

On Labour Day we went to take a look at the Forest Reserve Institute Malaysia (FRIM) and the Batu Caves. The FRIM is one of the leading rain forest institutes in Malaysia, but also in the world. Originally the English colonisers founded it. Many usable plants have been discovered by the FRIM. This day Jimmy, our tour guide, showed us around in the rain forest and told us about it. Jimmy is a student in Forest Trees and Forest Issues. He told us that the forest exists of three layers: the forest floor, the under-story and the canopy. Later on we walked on bridges that were built in the trees.



This was called the canopy walk. A great part of the flora and fauna live in the canopy layer of the forest, because it's the layer that gets most sunlight. But first Jimmy showed us some of the flora and fauna of the forest. The first animals we encountered were four huge fish, that were called the Arapanai. Other animals you will also come across a lot in the forest are ants. The first ant we met was a big one, it was a giant forest ant and it was about three centimetres long. It was this big because this was a soldier. Therefore, it can hurt a lot when it bites you. Although we didn't see any termites, we could see their doings. Termites eat the weaker trees; they clean up the forest. There was actually a lot more told about the flora in the forest. Jimmy showed plants that we already knew, like bamboo and cacao trees. But the latter is actually very hard to profit from in the wild, because it attracts many bugs. It became more interesting when he showed us plants with some very special properties. Take the 'elephant sitting down' tree, for example. It has far reaching and high open roots. Therefore it can attach itself firmly to the ground, even on steep slopes. It will be able to get more water and minerals from the ground, but also from leaves and other plants, which pile up between the high roots. We also saw some very special lianas in the shape of a long helix growing to the top of a tree. The lianas have this shape to make it possible to transport water to the very top of the plant. It is also very strong: an adult man can climb it. The leaves at the top of the tree never touch leave from other trees. It was very special to see the constant distance between the trees when looking up. In fact, this phenomenon can be found in only two places in the world.

Before we went to the Batu Caves, we ate something at one of the Indian restaurants. The food was served on a banana leaf and you had to eat with your hands, which wasn't a very big problem. After this we climbed the stairs counting 272 steps. As stated in the program booklet, there were many monkeys hanging around the stairs. At the top of the stairs – not far past the entrance to the dark cave – one could enter the main cave. This cave was very high and this was also the place where most of the tourists went. After everybody had seen this part of the cave we started the tour through the dark caves. We did two tours: the educational tour and the adventure tour. The first part of the tour could be done without problems. Our tour guides showed us what sorts of animals live in the cave. We saw cockroaches, a few dogs, a snake and of course bats. In this cave there were two kinds: fruit eating bats and insect eating bats. The cockroaches live on the guano, which is dropped by the bats. Snakes and other large animals eat bats that fall on the ground. We were told about the well known cave rock formation like stalactites, stalagmites and other formations which were formed by minerals in the water that poured there for many centuries. It became more exciting when we started the adventure tour. Some stayed behind, because we were going to get very dirty and we had to crawl through very narrow holes.

First our guide explained us some techniques how one should crawl through such a small hole and how dark it really was in this cave. The first part of this expedition was also one of the hardest parts. You had to crawl through the mud, lying flat on your belly, through a tiny hole! You couldn't get through without getting dirty. The entire adventure took us about two hours. Normally one would bring some extra clothes when doing this tour, but since nobody told us, none us of brought any! Fortunately, the bus driver anticipated on this and brought enough plastic to keep his bus clean. All in all this was one of the best days of the trip and I believe more of the participants thought so. C·

## Day 19: Monday, May 2nd
## Resting Day

*By Abel Meijberg*

A study trip: a great way for students to see something of the world, experience a different culture and get to know their fellow student a bit better. But besides that it's also a test of endurance and stamina. With all the great things to see, food to eat and people to meet you sometimes seem to forget very important things, like sleeping...

So after a lot of flying, bus riding, visiting companies and universities, climbing great walls and whatnot it was time for a well deserved resting day. I was really looking forward to just wake up whenever I wanted and not by an alarm clock at 7:00 in the morning like the past two weeks. For some weird reason I still woke up quite early, must be that "rhytm" thing I hear people talk about all the time. The Pondok Lodge was tranformed into an ultimate relaxation place. The other days we just came there at night to sleep, but today there were dutch people sitting (and lying) everywhere. Some were reading a book, some were watching some television, some were playing cards on the roof terrace and some of the extreme lazy people were just taking a nap. I decided to do something different: find air conditioning. The KL tower just happened to be air conditioned! I actually found some other people to go with me: Anna Ruben, Feike and Bastiaan.

The KL Tower is a 421 meter high telecommunications tower. It actually appears to be taller than the Petronas Twin Towers, cause it is built on a hill. It reaches 515 meter above sea level and is the fourth largest telecommunications tower in the world! We could see the tower from far away so we decided to just walk towards it. Of course it was a lot further than it looked, but we were getting used to the heat and the we didn't have to walk the final part cause there was a free shuttle service. We bought a ticket and took the "fast speed elevator" to the observation deck. This was a lot higher than you could get on the Petronas Twin Towers and the view was really amazing. You could see the whole of Kuala Lumpur and also the rich nature which surrounded the city. Another cool thing was the audio tour, you could get a tape recorder and a headset and while en-

joying the view there was a sexy lady voice telling you some information about the part of the city you were looking at.

After fourteen talks about Kuala Lumpur we'd gotten enough historic and cultural information for the day and decided it was time to get something to eat. It just happened to be that the KL tower was the perfect place for this also. At 282 meter above sea level you can enjoy a nice meal in the revolving restaurant. The costs for this were RM 60, which is very expensive for Malaysia. But it's not every day that you get the change to eat in a revolving restaurant above Kuala Lumpur and we decided to treat ourselves to a nice lunch. And boy did we get one! The buffet was really outstanding, with more sorts of food than you can imagine. After all the great food in China and also in Malaysia I thought it wouldn't get any better, but this was by far the best meal I had on the whole trip. In total we spent about two and a half hours enjoying the food and the great view.

After this we headed back to the hostel and relaxed there for the rest of the day. We heard some stories from the other participants about what they did on their resting day. Some went to Plaza Imbi or Bukit Bintang to do some shopping. Malaysia sure is a great place to buy some cheap DVD's or computer parts. Others just walked around the city a bit. But most just hung around the hostel after this and made sure they got some nice rest on the resting day.

## Day 20: Tuesday, May 3rd
## Universiti Putra Malaysia and Putra Jaya

*By Ymkje Huismans*

In the morning we drove to Universiti Putra Malaysia (UPM). I was too sleepy and the chairs in the bus were too soft to be able to listen to Ravi. While he was telling really nice stories, I was staring at the high buildings, low buildings, woods of palm trees and hills outside.

At UPM a woman of the international office welcomed us in a friendly manner. In the main hall, a small exhibition gave us an impression of the university in general. The precursor of UPM, the school of agriculture, was founded in 1931. Fifty years later, in 1971, it became a university. UPM offers a wide spectrum of studies: Modern Languages, Music, Human Development, Agriculture, Sciences and many more. With nearly 4.000 staff members (academic and non-academic) and more than 35.000 under- and postgraduate students it is a large university. After the introduction we got some refreshments. The coffee as well as the tea tasted very sweet. Most people seemed to enjoy it, I declined. The tea, by the way, was not normal tea; but "tea tarik": Tea with milk and sugar, with a very special taste (really different from the English tea). The snacks were special as well. I tried a jelly-like green cake. It tasted like the cake we are used to, but better.

Lucky for us, the campus tour was done by bus; walking to the bus was enough to make us sweat. The campus is very large, 1.200 hectares. Most

students live on campus, it can accommodate 30.000 students! But for those who appreciate their privacy, don't go studying here, most students share their room (to a maximum of three per room). Apart from university buildings, colleges (buildings where the students live) and a large mosque (75 percent of the students is Muslim), we saw a lot of sport fields. It is common to do sports every day: football, golf, swimming etcetera. We even saw students do sports in the burning sun with temperatures well above 30 degrees! Unbelievable.

At the faculty of Science and Technology (in Malay: Sains & Teknologi) we got a warm welcome as well. First we got a general introduction. This faculty is comparable to our own faculty, and a whole spectrum of sciences is taught, from Biology to Physics. For example, students in Physics, follow courses not only in their subject, but also in the other sciences, like Biology and Chemistry. Besides that, every student has to take some courses from outside its faculty. The Physics department (200 students each year) is specialised in Material Science. I got the impression that a lot of the Physics was in fact Applied Physics. In Physics you can study General Physics, Instrumentation Science, Education and Material Science. After the refreshments, with plenty of strange looking but delicious snacks, we went to see some education laboratory. Funny to see that their first and second year students do exactly the same experiments as we do: gyroscope, Fresnel diffraction, etcetera. The labs were looking good, unfortunately we only saw education and research labs for students, and no advanced research labs.

The sun outside was still shining brightly. Although I found the presentations and tours very interesting, I wanted to go outside and enjoy the sun. But I realised that I would regret staying in the sun after 15 minutes, so I was satisfied with walking from one building to another in the open air.

Just before the lunch we visited the Institute of Advanced Technology, where we had a presentation and a lab tour. The institute educates only graduate students. It has seven research labs, and we visited most of them. The labs where very different, from studying properties of materials to studying and improving the performance of robots.

We got a very good lunch with lychee drink, my favourite, and were ready for the last visit: the Institute of Multimedia. We all had to take of our shoes before we got inside, a very common habit in Malaysia. After the talk we watched an animation movie made by the computer. The creatures and humans in the movie were really moving like living creatures. In the studio they showed us how they did that. A person has to wear a special Spiderman-like suit. Then, a lot of white balls are put on the person. Four cameras detect the balls while the person moves. The observed balls are the input for the simulation program. This is

not only used to make animations, but also to analyse how humans move.

With the visit to this institute our tour at UPM ended. We went to Putra Jaya. Putra means 'Royal' and this is where the main office of the Prime Minister is located. The office and the nearby mosque are built close to the water. When we arrived, it started to rain. But down by the lake, we could still enjoy the very nice view over Putra Jaya. While they where calling for prayers from the minarets, I was sitting by the lake. The silence, the singing, the warm raindrops and the very beautiful view over modern and oriental buildings made it more than worth to stay for a while. The others didn't appreciate the rain that much, they were enjoying the view from a shelter. Just at the moment we returned to the bus, it started to rain very heavily! We ran as fast as we could and still got wet. It is unbelievable how heavy the rains can be in Malaysia!

That evening we had dinner at the Seri Melayu Restaurant with some students from UPM. During the dinner a culture show was being performed. Dancing styles of the Malay, Chinese and Indian cultures were showed. I didn't watch too much of the performance, because we had really nice conversations with the students from the UPM about the cultural differences and about religions (Christian, Muslim). Meanwhile I ate way too much; there was a large and varied buffet with lots of Malay, Chinese and Indian food. It was really delicious and I wanted to taste every-

## Day 21: Wednesday, May 4th
## MVD International and Western Digital

*By Laurens van der Starre*

Wednesday May the 4th, 8:00 A.M.. A friendly alarm clock reminds the occupants of room 8 that it's time to get up. A quick shower, a nice breakfast on the roof terrace, and we're ready to go.
Today we're going to MVD International and Western Digital, so it's bound to become a great day!
At 09:00 A.M. we're in our coach on our way to the Cheras Business Center. Ravi, our tour guide, tells jokes and trivia about Malaysia during the trip. We learn about the different ethnical groups in Malaysia, the religion and the rainforest. A thing we learn from the Cheras Business Center is that a 18 metre bus doesn't like steep hills. For normal cars, the transition from steep decline to straight road is just doable. For our coach however... Let's just say the front spoiler made a nice scratching sound. Anyway, we had to walk the last bit.

We go to the fifth floor in a building that looks like an appartment building. On this floor MVD International is located. MVD International is a relatively young company, founded in 2000 by Mr. M. Venodevan. MVD International has offices in Kuala Lumpur, Singapore and Hong Kong.
We're welcomed in a nice room by MVD employees. On the walls there are certificates, ex-

hibition cases with 'spy' gadgets and, surprisingly, a signed Benetton Formula 1 racing suit of Michael Schumacher. This suit was given to MVD after returning precious racing items of Michael Schumacher stolen from a exposition in Kuala Lumpur.

MVD has a special 'super license', which is called an A-license. With this license, MVD is able to get access to and search in national databases that are otherwise protected by some privacy laws. This license is only given to companies under special conditions. There are only about seven companies in Malaysia that have this license, and the government isn't just giving them away anymore. Therefore, MVD has a pretty special position in the market. Mister Venodevan tells us about his company. MVD has three core businesses: MVD Academy, MVD Investigators and MVD Technologies. MVD Academy gives training in Corporate Investigation, competitive intelligence and personal security. The MVD Investigator branch is called "the investigators without the car chases". They focus on things as surveillance, industrial espionage, private investigation, security consultation and employee screening.

Especially the latter is big business in Asia, because 40 percent of the resumes is misrepresented and 45 percent of potential employees have a criminal record. We are told in detail about employee screening. MVD screens about 7000 resumes a year. MVD checks the following: data (name, ID, passport number, telephone number, address etcetera), education (grades, university, finished education), referees (referees can be actors). MVD also checks people's criminal record, bank status and searches the internet for the person's name. On top of this, a full in-depth background search can be performed to find the 'why's' behind the lies.

All this might seem unethical from a certain point of view, but MVD states "not to judge anyone, just to dig out the truth". All findings are reported to the customer. The customer decides what to do with it.

MVD Technologies is concerned with online security, safe money transfer, credit card fraud and special software and hardware. Hotels in Malaysia have MVD software that keeps track of all registered visitors. When a customer misbehaves or doesn't pay, it will show up in the system in all hotels. We also got to see a, on first sight normal, Nokia GSM phone, which happens to be a dummy phone with a built-in micro spy camera. A standard Sony TV receiver is used to receive the video stream. It works from a great distance and through obstacles like walls.

After the very interesting talks, MVD was kind enough to take us out to lunch. We had lunch at the Janbo Seafood Restaurant. During lunch we talked with some employees about their daily work, and got to know about some interesting cases. One of these has some leads to Holland and a certain manager at a certain TV station...

After lunch, it was time to go to Western Digital. On arrival at the Sungei Way Free Industrial Zone we were not faced with some steep hills in the road. No, for some reason this road was blocked by a roadblock only allowing vehicles

lower than 1.62 m. After a quick turn around and a great sightseeing tour through a neat villa neighbourhood we arrived exactly on the other side of the roadblock... So we arrived at Western Digital around 1:40 P.M.. Western Digital, or WD, was founded in California, USA in the seventies. It originally made all kinds of product, ranging from calculator chips and VGA video cards to hard disk controllers. In 1988 WD started making hard drives. Now WD has R&D offices and factories all over the world.
We are welcomed by Joseph Koh and Su-Yin Koo from the Human Resources department. They tell us about this plant and WD in general. In Malaysia, it's the only hard drive factory left. Around 7.000 people work here to produce 100.000 hard drives a day. Almost all workers are Indonesian women who work 12 hour shifts during four days, after which they have two days off. They operate in a class 100 clean room.

After this introduction and refreshments, engineer Badri Shah tells us about the hard drive production process.
The production plant is set up according to the 'classroom' and the 'salad bar' concept. Groups of workers work simultaneously on the same part of the disc. There are different stages in the production process, from placing the media disc on the base plate and balancing it, to placing the read/write head and closing the cover. All these processes are labour intensive, and much is done by hand (with, of course, the help of the necessary machinery and equipment). Most of the hard drive's components are not produced here. They come from external suppliers. Only the assembly and testing is done here in their Malaysian plant.
After the interesting talk of Mr. Shah, engineer Peter Hung hands out two hard drives for us to see. One is a prototype of the new 400 GB drive that will be released in the third quarter of the year, the other is the top of the line 74 GB server disc. Both discs come in a glass casing, so all the machinery is there for us to examine.

Mr. Hung gives us insight into the technical view of the hard drives. The head of a drive flies above the media disc on a cushion of air, created by the spinning of the disc. The head floats only just above the surface of the disc. Because the surface is very delicate, there is a special landing zone for the head on the disc. Whenever the disc is slowed, or in case of a power failure, the kinetic energy of the spinning disc is used to land the head on the landing zone.
The sector density on the outer tracks is physically higher than on the inner tracks, but this is still linear for software. The size of the hard drives is limited by two factors: the media disc and the read/write head. At the moment, the limiting factor is the media disc.

The hard drive controller works with Intel and ARM commands and runs at a speed of about 50 MHz. Many tasks are done in hardware. Newer discs have built-in integrity checks which scan for bad sectors during idle time.

Mr. Hung didn't tell much about future projects because that is classified information. He did say however, that perpendicular recording is being researched and they look at the 0.8 inch disc technology (so skipping the 1.8 inch).
After this inside look into the world of hard drives, it is time for the plant tour. We are lucky; even with our Level 5 clearance we are going to see the other levels as well.

The tour starts at the storage centre. Here huge data collecting machines, with nifty flashing blue LEDs are collecting every aspect and piece of data from the building process. After this centre we arrive at the clean room. We look inside, kind of like looking into a huge fish tank, and we see hundreds of people in white suits. Joseph explains that this is a class 10 clean room, that is run as a class 100 clean room. We are shown the 'classroom' and the 'salad bar' way of construction. All the people we see are women. There are three distinctions to be made: suits with a white mark are operators, blue and green marks indicate technicians and chocolate/brown marked people are the leaders. Red, yellow and green lights above the machines indicate the state of the machines, so you can immediately see if there's something wrong in the production process.
After this clean room we visit the merging area were the Printed Circuit Boards (PCBs) are placed on the hard drive. PCBs are made by huge machines that place three ICs a second on print boards. Four PCBs on one board undergo cruel hammering by chip-placing robotic arms and automated soldering machinery. Then the four PCBs are separated and undergo a visual and other tests. All PCBs undergo complete tests before they are mounted on the hard drives.

After this production process, we visit the test facilities. Thousands and thousands of hard drives are tested here. Everywhere we see green, yellow and red LEDs. I assume that red means error and green means okay. A small amount of discs are put in an environment chamber where they are tested at a temperature of 55 °C. Overall less than two percent of all discs tested have some kind of error. This can be a minor error or something more severe. A, so called 'CSI' team investigates the severe cases to see if there's nothing seriously wrong in the design.
In this plant, the manufacturing of one disc will take about eight to sixteen hours, including testing and packaging.
With this tour, our visit to Western Digital has come to an end. After the group picture we leave again. It has been a fantastic day!

## Day 22: Thursday, May 5th
## Universiti Kebangsaan Malaysia

*By Johan Brondijk*

This day, we had a tour to one of the two universities we had planned to visit in Malaysia: Universiti Kebangsaan Malaysia (UKM). Established in 1970, it is a rather young university. We visited the main campus, about 35 kilometres south of Kuala Lumpur. UKM also has a branch


campus in Kuala Lumpur and a teaching hospital in Cheras known as Hospital UKM (HUKM). Of course UKM has formulated a nice philosophy, vision and mission; they are committed to be the leading university that pioneers innovations in creating a dynamic, knowledgeable and ethical society, based on the faith in Allah. Furthermore, they want to promote the value of Malay as a language of learning and want to take a bigger part in the global scientific community. They try to attract more international students, instead of sending Malay students abroad. Because of this globalisation, some (master) programs are in English, although they want to keep as much as possible in the Malaysian language. The University is funded mainly by the government (80 percent), but they try to promote the collaboration with the industry. There are about 24.000 students, of which around one thousand are international students. Again, as we have seen at UPM, the male-female ratio is very different from the Dutch one: about 60 percent females, and in the Faculty of Science even 70 percent. There are a lot of student clubs and there is also a dedicated building for club offices. Most students live on the campus in a college ("Kollej"). Because there are a lot of people applying each year, the university selects the best students, based on their grades. Most undergraduate programs take a minimal of three years, most masters programs one year and PhD programs take three years.

After our arrival, we had a welcome in a rather comfortable conference room. Here we listened to a general introduction of the university. We also received a nice souvenir to remember our visit by. There were three visits on the program; the first was a visit to the Faculty of Information Sciences and Technology. First we had an introduction and discussion. This faculty has a population of around 1.700 undergraduate and 400 postgraduate students. They have a strong co-operation with the industry by means of a consultancy branch and receive a lot of money from it. After some refreshments we got a tour around the buildings. We visited a small library, a computer room and a robotics lab.

The second stop was the Institute of Microengineering and Nanoelectronics (IMEN). This use to be a part of the faculty of Engineering, but since 2002 it is a 'centre of excellence' in UKM, independent of any faculty. At this institute more advanced research is done, so here we found no undergraduate students. First we had a very quick introduction, in which the organisation structure was explained. The institute focuses on six major research themes: Micro-Electro Mechanical System (MEMS), High Frequency Technology for Telecommunication, Organic Electronics, Photonics, System Design and Nanoelectronics. Their goal is to be a world class research institute for microengineering and nanoelectronics by the year 2006. Then we visited the MEMS lab. Micro Electromechanical Systems (MEMS) are a class of micron-scale devices made using semiconductor processes that integrate electronic and mechanical functions. In this lab a class 1.000 clean room

is used, and a lot of good equipment was available. After the visit to the MEMS lab it was time for a good lunch. The PhD students of the IMEN who guided us through the lab joined us and we had a nice conversation.

Our last visit was to the Faculty of Science and Technology. This faculty was established at the founding of UKM in 1970. After a few reorganisations and changes of name it is called Faculty of Science and Technology since 1999. It consists of five schools, which are for short: Bioscience, Applied Physics, Chemical & Food, Mathematics and Environmental science. The bachelor studies are in Malay, the masters in English, to make it easier for foreign students. Fundamental research is done, but it is much easier to get funding for applied projects, so most of the research is in the field of applications. They try to stimulate collaboration with the industry. For radiation physics, there is a collaboration with a hospital, which is equipped with a 12 MeV electron accelerator. They also wanted to learn more about us, so Mr. Groen held a little speech about the University of Groningen and the education as well as about the background of the study trip. We also visited a couple of research groups: The first was a group where they had developed a way to produce paper from non-woody plant material. This research was done in collaboration with FRIM, which we had already visited on the 1st of May. In 2006 this concept will be industrialised. Also glue and plastics can be made from this non-woody material. The second group did research in the field of polymer semiconductors. This was especially interesting for some of us who have worked in the group in Groningen that also focuses on this field.

Back at the Pondok Lodge, we had diner in a very good Thai restaurant near the hostel. After this, we went to Times Square, one of the very big and luxurious shopping malls in the city centre. Unfortunately, the mall closed at 10 P.M., so we had very little time. Afterwards, three of us played a game of pool at a small Croatian bar near our hostel.

## Day 23: Friday, May 6th
## Philips Semiconductors Seremban and Dutch Embassy

*By Ilja Plutschouw*

Today we made a trip to Seremban, a small town about 60 kilometres outside of Kuala Lumpur. The size of this town is comparable to Groningen, but we didn't see anything of it except the industrial area. Here we find the Philips Semiconductors factory, where they fabricate tiny transistors, diodes, and simple combinations of both. They seemed to be very careful about company espionage, because the first thing they told us was to hand in our cameras. Once inside, I was surprised that a Dutch man, named Theo Halders, welcomed us. Although Philips is a Dutch company, I still didn't expect to see a Dutch head of department operating over there. In his presentation he gave a very clear

view of Philips and Malaysia. During the break he talked about how the relations between the several minorities and the Malay people are. We had not heard about this topic before from the Malay people themselves. After this introduction we had to put on white jackets and a cap for a tour through the clean rooms. That is where the silicon wafers are cut into small pieces, put on a copper strip, and being connected with tiny gold wires. Everything is done on a scale that can only be seen through a microscope. Impressive machines. The process is very much automated, in contrast to the Western Digital factory we visited earlier.

In the afternoon we drove back to Kuala Lumpur, to Midvalley Megamall, a large shopping centre. There we would meet with the Deputy Head of Mission from the Dutch embassy. But before we met him, we had some time to walk around in the shopping centre. Downstairs there was a fashion show going on and on the third floor we could visit "Window on Holland". At this exhibition of Holland we could taste some real Dutch "poffertjes", which are small pancakes. And there was a guy making Dutch wooden shoes, something I've never seen being done in the Netherlands. Also, there was an original street-organ. The owners of this street organ happened to be from the same part of Holland as we are from. One guy of the group, Ewoud, was even raised in the same village. We didn't have much time for them though, because the man from the embassy was waiting.

In a small room next to "Window on Holland", a man - who reminded me of like an actor from a British political satire television series from the nineteen eighties ('Yes Minister', Ed.) - waited for us. He was the second man of the Dutch embassy. He started explaining a bit about the purpose of an embassy and the number of people that work there. After this came a short history of Malaysia, about censorship in the press and more specific, a Dutch movie. He told us that one day a Dutch movie was shown at a movie festival, but that an explicit sex scene had to be censored. But since there was no way to cut this piece from the movie, a piece of cardboard was held in front of the projector, which of course didn't extinguish the sound.

In the evening we had the last supper of our trip. Ravi, our guide, had found us a restaurant where they served European food. It was the first time in weeks that we saw a plate with only one vegetable, broccoli, and one piece of meat. It tasted very good though. At this place the committee was thanked by the group for their fantastic organisation of this trip. Niels held a short speech telling how well he liked this group of people. As dessert, also something that we didn't have every day, we had pancakes with ice on top.
Right after dinner, most of the group went to the Zouk, the trendiest place in Kuala Lumpur according to one of the people at Western Digital. In the Zouk there was a quiet bar that we visited first. It was a calm place where they played relaxing lounge music, but unfortunately all of the

seats were reserved. We walked around for about half an hour, looking at the psychedelic coloured bar, having a talk and drinking our 'free' beer, and looking at a mysterious green bar of light. But soon people started to get bored by this and wanted to check out the other part of the Zouk. This was a real discotheque, loud music, green laser lights, dancing people... and... again a mysterious green bar of light. At this point I also noticed that Ravi was with us, and he seemed to like this place a lot as well. Once dancing I looked at the vertical green bar of lights again... and suddenly noticed the text "Johnnie Walker" hanging in the air. I was a bit disappointed that it was nothing more than an advertisement.

At around half past two, I walked back to the lodge with Martijn, friendly rejecting the prostitutes on the streets. After 20 minutes we arrived. Some people were still on the roof drinking, but I was too tired after all the dancing and quickly fell asleep. C

## Day 24: Saturday, May 7th and Day 25: Sunday, May 8th
## Final day in Kuala Lumpur and Journey home

*By Anna Dinkla*

Saturday we had planned to go to the Pudu market in the morning and to have lunch in Chinatown in the afternoon, but since almost the whole group had been going go to the Zouk Friday night, the committee had decided to give the day off. As expected, many of us took this opportunity to get some more sleep, and some to get some sleep at all (I believe some had returned at 4:30 A.M.). I had apparently gotten used to waking up early. When I woke up my watch showed 8:00 A.M. My room was empty and I felt quite fit, so I thought my watch must have stopped. I went outside the room to ask the 'breakfast dude' for the time. It turned out that my watch was right and I could go back to sleep. I found out at breakfast (9:30 A.M.) that I was not the only one who had developed the habit of getting up early! So far, we had been escaping the sun constantly, so on the terrace Georg and I did our final brave attempt to get a suntan. It didn't work out for us, but later I saw that Joris had managed to get his face burned this very last day. After packing my suitcase, Ruben and I went to Chinatown, because we still wanted to make a stroll down Petaling Street, where all the fake clothing and DVD's are being sold. All the stuff sold there is the same, and the people can be quit annoying ("Lady, Sir! DVD's! You're my friend!"). By the way, we were smart enough to take the monorail in the wrong direction (which we didn't notice until the train turned around), and it took almost an hour to get there... It was lunchtime by the time we arrived in Chinatown, so we sat down at some cheap roti place. The menu was in Malay, so we just pinpointed the most expensive roti (a dish with Indian bread), which was, according to the waiter, a dish mixed with vegetables and meat. It turned out to be a blended mix of these three ingredients, including

the bread. We didn't expect that we had to take the word 'mixed' that literally. Though it didn't look very appealing, it tasted quite good actually. But what we really enjoyed were the 'blended ice shakes'. They had them in all different flavours, for only 2 Ringgit (0.40 Euro) a glass. The next thing you know is you've got a whole table full of empty glasses! After lunch, we headed back to Bukit Bintang, where we did some final shopping at BB Plaza and Lot10, and after having a delicious banana/chocolate smoothie we looked up a Chinese massage salon for half an hour of serious bone cracking. I'm not really used to people pressing their knees in my back, but it was a very relaxing experience. More relaxing for me than for the masseuse, on whom I spotted drops of sweat on the forehead afterwards. Since it was almost time to get ready for the bus, we went for a quick meal with rice, beef curry and some beans. For the last three weeks, we had collected many kilos of junk, so the suitcases had to be packed with a little more care, but one hour later we all were ready. During the drive to the airport, Ravi gave his last lecture. We thanked him for all his lessons on Malaysia, his enthusiasm and his effort to think with us and to make sure we were having a good time. The night before we had observed that he likes a good drink, so we could be sure that the bottle of Beerenburg we gave him was received well. As a matter of fact, he told us he had such a good time Friday night; he didn't want to go to bed after the club closed down, so he went to his friend's house to have a chat. Now, he was still wearing the same clothes and he hadn't shaved...

The check-in at the airport went very smoothly (because we had become professional travellers or because the airport was quiet at night?) and the group split up in a Mc D., Burger King and Starbucks group. Apparently everybody craved for some real American food. Finally, at 1 a.m. (7 P.M. local time in the Netherlands) the plane took off and we could enjoy the meal, for some people their third one. I think there was significantly more sleeping done than on the outward journey, so the flight passed relatively fast. We landed twelve hours later, at 7 A.M. Most of us where sad to be going home, having to step back into 'real life', but everybody needed to get some rest. During the flight the first evaluations were made, as well as in the train to Groningen. Many of those evaluations will follow of what has been a fantastic trip!

# View from the other side

**Report by Tony and Candy - our Beijing guides**

*Tony:*

与STAR-05取得联系是在2004年，在2004-2005年里面我们与STAR-05为初步的计划进行了很多次的E-MAIL的沟通。 STAR-05的成员应该是很好的很团结伙伴，STAR-05先提出了一些计划。来自STAR-05的最早的计划是很好的，但是如果确实发生的北京也许就会出现一些安全上的问题。出于安全的考虑我们提出将一些计划进行改动，很高兴的是STAR-05也同意了我们的建议。北京的4月---10月，是旅游的旺季，我们所安排一切都是很紧张的，在团队到达北京的前4 天，所有的一切都已经安排完毕。在北京的14天是学习交流的时间，每天都有着不同的学习计划。STAR-05参观了中国的大型科技发展公司，在中国建立的国际大型公司，大学，还有很多很多- - - - - - 作为旅游服务公司，我们让CANDY负责每天的交通和参观服务工作，在工作中她也感受到了STAR-05成员的开朗，善于交流，探索，和良好的团队精神。因为我们是一个小的旅游公司，所以TONY总希望让客人获得最好的服务，因此这次北京之旅的重要部分是由TONY自己负责的。 STAR-05的团队在北京攀登了荒野的长城，在北京人的家里品尝了饺子，在古董市场同北京人“砍价”。当然，在看完功夫表演后，还有一些成员在TONY的帮助下也学习了中国的击打砖头的功夫。关于在北京的旅游的项目，STAR-05应该是我们所接待的客人里面最全面的了。应该说很少有客人能在短时间内将北京市了解这么多。北京作为一个正在开放中的城市，热情的欢迎着每一个客人。我们很怀念STAR-05那一段在北京的日子。 2008年离现在不远了，我们ASK-TONY TRAVEL INFORMATION 也在努力的为客人工作，我们期待有再次想见的那一天，让我们为中国和荷兰年轻人之间的友谊干杯。

*Translation*

We were contacted by STARS '05 at the beginning of 2004, we had contact several times about the STARS '05 program.

The family of STARS '05 group is a good accompany. At first, STARS '05 gave me the program. The program which STARS '05 gave us at the very beginning was very well, but maybe there would be some security problems in China's situation.

After we considered the security, we amended the program, and the group agreed with it. It's a high season during April to October in Beijing, so we take uptight order with everything, four days before the group arrived in Beijing, we already did everything well.

During 14 days in Beijing, the group had a different plan every day. Help with STARS '05 visited the Institute of Chemistry Chinese Academy of Sciences, Institute of Software Chinese Academy of Sciences, Beijing Kenuohua Electronic Technology Co, China Institute of Atomic Energy, Ricoh Software Research Center Beijing Co and some famous universities in Beijing.

As the travel service company, we arranged Candy in charge of the transportation and the service of visit task, she feel the group with the good communicate, explore and has good group mettle. As we are a small travel company, so Tony and our staff pay more attention to the service for guest. The important part of this task is in charge by Tony.
STARS '05 hiking the great wall, testing the Chinese dumpling, cutting price in the Panjiayuan market, and learn the Chinese brick cutting Gongfu with Tony's help after see the Chinese Gongfu Show. About every travel project in Beijing, STARS '05 know all about China and Chinese people. As the open city, we welcome every guest, and we miss all STARS '05 group members the day in Beijing China. 2008 is coming; 'Ask Tony Travel Information' is getting ready for serving the coming foreign travellers visiting the Olympic Games. We hope we can meet again one day!
Let us cheer and bless the friendship of China and Holland people.

*Candy:*

First, I think it's very glad to know the STARS '05, everyone is friendly. At the beginning I'm worry about my English, so I'm not good at speaking in the beginning days, then we are know well each other, so I can speaking much well. We altogether for about 2 weeks, it's very happy every day, and my English get exercise, but the important is I know so much friend. I hope we can see again. ◀

## Report by Ravi - our Kuala Lumpur guide

Dear Rogier & the 26 Groningers,
The days pass fast now that you are back at the University compiling your reports. I have just sit here imagining what were the sweetest moments that I would cherish. There were so many, just seeing you recover from the flight was interesting and you all recovered splendidly well. Not forgetting the moment the rain got us really wet, especially the one who danced in the rain. Oops!! I'm yet to return the umbrella to Rona, the coach driver.

To the other one, that had a rude welcoming, with hot soup down his back, I'm sorry again, hope things are fine. My admiration was for the collective understanding and the individuals' independent decisions that were accepted as a collective team effort.
I found myself out of time too, and later found that you were able to obtain the Malaysian flag, without my help, a great feat. Just believe that everything is possible in Malaysia.

Things are not very much different here, when we are out and decide for a vegetarian meal, or "halal" status, and I can imagine how you went back to bacon and eggs. Here we call it beefy bacon and eggs. Next time with the students, in the college like UKM, you should plan a lunch that both parties cook for each other, then you can introduce cross culture in gastronomy.

For those who missed the warm beaches and highlands maybe next time. Maybe, just as a suggestion, as some did mention, a country technical college by the sea where you have the opportunity to visit an aboriginal settlement, and maybe eat their food. I'm smiling as I write this because this is sure an orientation program, when there's no toilet.

Lastly, I had a wonderful experience with you guys with such growth potential between countries, and a 'Shabas' to Groningen University for continuing such a student programs yearly for better understanding of our countries. Thank you for letting me pen this short message. We on our part would like to see and provide new relevant information in the future.

Thank You All / Terima Kasih Semua

Bye and love you all,

Ravendran Navaratnam ◀

## Report by Jason - our interpreter

*Before I met the STARS delegation*

Last year I received an e-mail from Rogier (I forgot the exact time, but I am sure it was very early). At that time I did not know Rogier but he said he knew me from Jantine (my friend from the Netherlands), explaining what they would do in Beijing, want me as their delegations' translator, and they would provide salary for me. At the first time I refused. I had two reasons. Firstly, my English is not very good (even some others don't think so, but I am not very confident with my English) and I did not want to make any mistake during your staying in Beijing. Secondly, in China, if you don't have a license, you can't guide tourist group for money.

But Rogier said from my e-mail and Jantine's introduction, I would be able to handle this duty, and he also told me I would not need translate scientific and technical things at academy places and companies. So Rogier made me feel I could provide my help for you. And I told Rogier I didn't need salary, because Jantine introduced you to me, and also I want to make friends with you, but I need food and bed. Rogier said that was no problem.

After several e-mails, I began to prepare for this trip. Firstly, I bought a suite (that time I was very lucky, got a nice one in discount), bought a pair black shoes and a tie and a white shirt. Secondly, I began to collect friends' address and telephone numbers who stay in Beijing. I thought that if we would have any big problems in Beijing we could get enough help from them. Some of them are my professor's students and friends, some of them are my students and friends.

Then, I was looking forward to your arrival for several months.

*Stay with the STARS in Beijing*

At April 15th in the morning, I started from my university, and went to Xindadu hostel, where I

arrived at about 2:30 p.m. At about 5:00 p.m., I heard there was a big chaos and noise at the hostel, so I knew you were there now and I felt a little nervous, I would meet you now. I walked out of my room and saw so many big men and women. That was a little impressive for me, oh... so tall. My nervousness (or shy) and also my poor English made me get nothing of your speaking, such as, who is my buddy and how to check. I just knew how to say "nice to meet you! I have been looking forward to your arrival" All of these kinds of words..... .Although I had practised to remember your name so many times during my preparation, I had no idea of who was who. I just remembered five persons' appearance: Abel, Anna, Klaas, René, Coen (but did not know their names at that time) Oh!..... of course Rogier (and knew his name by that time).

I already had my supper at that time, but I also had supper with you again. Interesting, we successfully found a bill problem of that restaurant. We should pay 30 yuán per person, but they asked 40 yuán per person. Before that time, I had been asking myself what I could do for you, what would be my role. Then I felt a little bit better. I said to myself, at least this is what I can do during your trip in Beijing.

During the fifteen days with you in Beijing, sometimes I explained some food problems (I know this better than others). Sometimes I provided some background information of the sites we visited, such as how many students are studying in universities in China, how many postgraduate students are studying in China and what is common life like of Chinese students. We even discussed some political problems with some of you (through this I understood maybe there is some misunderstanding about these problems between us, but talking and communicating with each other is very important. So the open policy of china is really right) and in fact, we also talked about some not very polite things, but this is also made us have a good relationship and better understanding of how Chinese students live and how Dutch students live.

One day I saw Sietze having a bleeding nose, he had a lot of red papers in his hands. Even though Sietze said it didn't matter, but that also scared me. I did not know what to do, I thought I should get some help from others. Then I found Mr. Xie (the manager of Xindadu hostel), he told me how to handle this problem: if the situation would become serious, which hospital we should go to, and all of these things. Luckily, no more of this kind of things happened again, just someone buying some medication for their food.

Sometimes I also translated at some place. For example, at Peking University physics department, Coen asked them how to set down their scientific research policy. All of them had no idea, and I translated Coen's meaning to them. That made me earn a little bit admire from the Peking University students (some of them told me, ha ha.....).

Sometimes I contacted the place where we would visit. For example before we visited Raycom Company, to confirm the weather (whether there would be a sandstorm), the time and so on.

I had been finding my role because in Beijing we have Tony, Candy, Laura and the driver. They did a great job too, but for me, I just went around with you, did some tiny things. That made me feel nervous. Everyday I prayed in my heart: please give something for me to do. ◀

## Article in the PKU newspaper

*By Xiao Fei*

On April 18th, a group of person who came from Gronigen university of Holland pay a visit to Peking university. As the member of the european association, I participated in the activity of communicating with those foreign friends.

This visitation is their STARS '05 study program in Asian. They spent two weeks in visiting famous companies, universities and Great Places of China. Through this visitation, they have a new impression on china which is far different from the impacts before. They said that china is more develop and democracy than they had thought. They are very interested in the culture and history of our country and we also know some information about Holland.

One word, they think china is great and chinese are friendly. These friends from Holland is very friendly and nice. It's easy to get along with them. Although the culture and background is different between China and Holland, but I think all the youth have the similar thinking and idea so we have a lot of common topics. We and the Dutch students built a good relationship and we hope that in the future we have chance to visit Netherlands and meet them again.

I think that the communication between different countries is very important, it can make us know better of each other and promote the relationship. The world needs to be recognized, understanding and friendship are needed among countries. ◀

# Scientific Staff

## Report by Ena Tiesinga

In November 2004, the organising committee of the two yearly GBE asked me if I would like to accompany the STARS '05 excursion to Beijing and Kuala Lumpur. Although I had no idea what would be expected of me during the trip, I did not need a lot of thinking time; I could not turn down such a great opportunity to go east.

In the months before the actual trip we had several participant meetings. After those meetings it still wasn't clear to me what my role would be during the trip (especially since mathematics was missing on the program). By that time I decided to stop wondering and just wait until the beginning of the trip and see what would happen.

Well, looking back, I just had to relax and enjoy the trip. The organizing committee had done a great job, and the students themselves were very capable of asking difficult questions during the scientific program. Hence, for the accompanying staff there was little more to do than shaking hands and (on rare occasions) giving short introductory talks about our university and study tour.

*Beijing*

We arrived in Beijing at the end of the afternoon. The first impression of Beijing was that of a very big city with many large grey flats, chaotic traffic in the streets, and a lot of smog.
Immediately, I began to wonder whether 'the traditional China' would still be present in the city. I was very happy to discover in the next two weeks that it was still there.
It could be seen in the streets: old men in blue 'Mao suits', a carrier cycle loaded with large piles of cargo, a group of men sitting in a park playing a board game, small busy streets with a lot of shops and busy markets. And of course, it could be seen in the historical buildings: the Forbidden City (although crowded with tourists), the Great Wall, the Summer Palace, the Lama Temple, etc.

The scientific program took place in and around Beijing. We have visited two universities. Unfortunately, because of a miscommunication, the scientific program at these universities was rather poor. Instead, we have made extensive tours around the campuses (compared to which Zernike really looks like a desolate place), and had a lot of time to talk to the students.

Furthermore, we visited some companies. The atmosphere in the local Chinese companies like Raycom (plenty of time to play badminton and make group pictures with the employees because of a power failure, two employees who give their first English presentation) and Kenuohua (a presentation in Chinese by the director himself, translated by two of his employees and then corrected in English by the director, and of course a group picture with all the employees of the manufacturing department) differs a lot from the atmosphere in the international companies like Intel (a pizza for lunch, and doors which can

only be opened with a pass) and Ricoh (with a lot of demonstrations of their software).

And, of course, we visited some research institutes. The National Astronomical Observatory (an interesting overview of the astronomy projects in China, and an impressive view on a lake and surrounding mountains), the Chinese academy of sciences (a lot of posters) and the Chinese institute of atomic energy (including a good presentation of Ymkje and Thijs).

*Kuala Lumpur*

After two great weeks in Beijing it was time to move on to Kuala Lumpur.

We arrived at the airport of KL at about one o'clock at night, it was still 27 degrees and very humid. Pretty soon sweat was running all over my body. It kept on running for the next days. But, a week later, back at the airport of KL, I hardly sweated after carrying my suitcase to the departure hall. Apparently, one can get used to the heat.

KL is a very green city with a lot of palm trees, the Petronas building, the KL tower, a lot of malls, mosques, and besides new modern buildings old colonial buildings as well. The city is not very big; if it weren't for the heat, one could visit all interesting sites walking. Fortunately, the city has a good air conditioned transportation system which consists of three different types of transportation. This causes a lot of transfers, but once you get the hang of it, it is very easy to move around. Not far from KL the jungle starts, with its abundance of growth quite different from the Dutch forests.

During the scientific program in KL the organising committee allowed us to dress 'smart casual' because of the high temperatures.

At the universities our hosts (several heads of department) formed rather official delegations. Unfortunately, there were no students to talk to (they were on a semester break). We were told that the majority of the science students is female (will this ever happen in Holland?).

The international companies like Western Digital and Philips have only brought their production lines to Malaysia. The R&D departments of these companies are still in the west. I wonder what will happen with the economy of Malaysia when these companies disappear to even cheaper countries. We have also visited a local company, MVD International, a security company. This was fun; apparently private investigators really exist.

Our last visit concerned the Dutch embassy. They were waiting for us in a mall. In this mall the embassy had organised an exhibition on Holland. Naturally, this exhibition showed the typical Dutch wooden shoes, tulips etc.

*Back home*

Then, after more than three weeks in the east, it was time to go home. Shortly before the landing at Schiphol the captain made an announcement: 'The weather is Amsterdam is nice, it is 7 degrees'. Later, in the train to Groningen, it

started to rain. Cold and rainy ... we could no longer deny it: we were back home. ◀

## Report by Coen Groen

It is a dull afternoon in the middle of the week at the end of February. Lights are on and outside the window it is cold and cloudy. I am preparing to go to a meeting in Haren at the lab for Biology. It's late already and it is more than half an hour by bicycle. Suddenly two students enter my room and ask if I have some time for them. "Can't you come back tomorrow" is what I ask them, "I have to go now". "Well, it only will cost you five minutes, it's a short question" is the reply. My experience with short questions is that answering them mostly cost a huge amount of time. "OK then, just five minutes, what is the problem". "We would appreciate it if you could go with us on our study tour STARS". My colleague opposite of me has stopped her work and I almost feel her listening. "I am not sure if I can find the time for it but if I say yes, where do we go"? "Two weeks Beijing and another week Kuala Lumpur"????? WHAT??, YES, YES, ok, I go, of course I go, no matter about the amount of work when I am back, and the money who cares, Beijing, Kuala Lumpur, what five minutes?, take an hour gentlemen,……. take two hours to discuss it with me!!! …….is what my inner voice shouts. "Well I need some time, I am not sure if I can manage it, but next week I'll let you know", is what my other, cultivated, voice for extern communications says.

"Why didn't you say yes immediately?" asks my colleague after the students left. "I know you. You will go." She knows that and I know that too. In this way a very good and well organised study tour started for me.

BUDDY CHECK!!!!!. CHECK!!, check, CHECK !!!!, check, check, ……what?..CHECK, where's Joris? .....I don't know, I didn't see him. Ah there.....Check, CHECK,…..where are Ena and Joost? CHECK, CHECK,…….. And there we go, into the bus; 27 well dressed men and women, black suite, shirt and necktie, even clean shoes. It is 8 A.M., and our hosts are waiting for us at the campus.
I don't know who invented the buddy-system but it works very effectively. And again and again I admire the self-discipline of the students because despite the karaoke and the disco the night before, on the right time at the right place, everybody was always present.

16.40 P.M. The bus slowly is searching for his way through the Beijing traffic. We are passing the spectacular architecture of nowadays Beijing. High buildings in which sometimes you can recognize the features of a Pagoda. Marvellous, what a city! From the speakers comes a distant "Don't cry for me Argentina" sung by Madonna. The rest is silence. I look around and see a lot of sleeping people. And only a few pair of eyes, in different stadiums of consciousness, are open. I thought I was awake all the time but the digital proof of the opposite is very clear. We are return-

ing to our hostel after an excursion.
The program on this tour is very well balanced. Scientific Institutes, universities, meetings with students and staff, but also visits to companies and their managers are well chosen and very interesting. Not only in China but also in Malaysia. All over the atmosphere was very friendly and open. Everything could be asked and discussed.

My clothes are wet. Wet of transpiration. It's hot and humid. I am alone. Alone with the rain forest 30 meters beneath me. I am standing on a rope bridge, a narrow plank held up by ropes and the only possibility to leave it safely is to go on. From tree to tree. I look around and through the hazy sky, far away, I see the KL Petronas Twin Towers. I look downwards and see the "roof" of the rain wood. It is silent and I am alone with my thoughts. I never thought I would dare it, because now and then I have a little fear of heights. But now I am standing here, looking around in all directions. Before me I see Else, she just reached one of the plankings high at the top of a tree where you can stand for a while and where it is more stable. The bridge moves a little and begins to swing. Somebody must have stepped on it to follow me. I feel like Indiana Jones, what's missing is an evil Indian priest with a machete trying to cut the ropes because he wants to stop my escape. I go on and feel mighty and triumphant. I did it, YES !!

Besides the scientific program there was a tourist program. And believe me; a tourist program with students is different from the travel program of a 65+ culture trip.
Exploring the Chinese wall, creeping through dark caves, Kung Fu show, Beijing Opera, Temples, Forbidden City, Malaysian Dance, Markets, The Forest Reserve Institute Malaysia, Petronas Twin Towers, it was complete. Both scientific and tourist programs were a success. Not in the least because of the good information in the professional Survival Guide and the daily briefings.

It is dim around me. Stewards and stewardesses silently pass by. After so many hours you don't hear the noise of the jets of the Boeing 747 anymore.

The lights are switched on and breakfast is served. It is 05 A.M., local time and within an two hours or so we will arrive at Schiphol Amsterdam. I am looking for my fellow STARS travellers. As far as I can see they are all in the same nostalgic mood as I am. Tired but satisfied. It's all over now. "Here is your captain speaking. Within a few moments we will arrive at Amsterdam Airport. It will become quiet day. The sky is clear and the temperature is 7 degrees centigrade" (7!!?). It is Sunday morning the 8th of May 2005, and we all are preparing for another and very different reality. ◀

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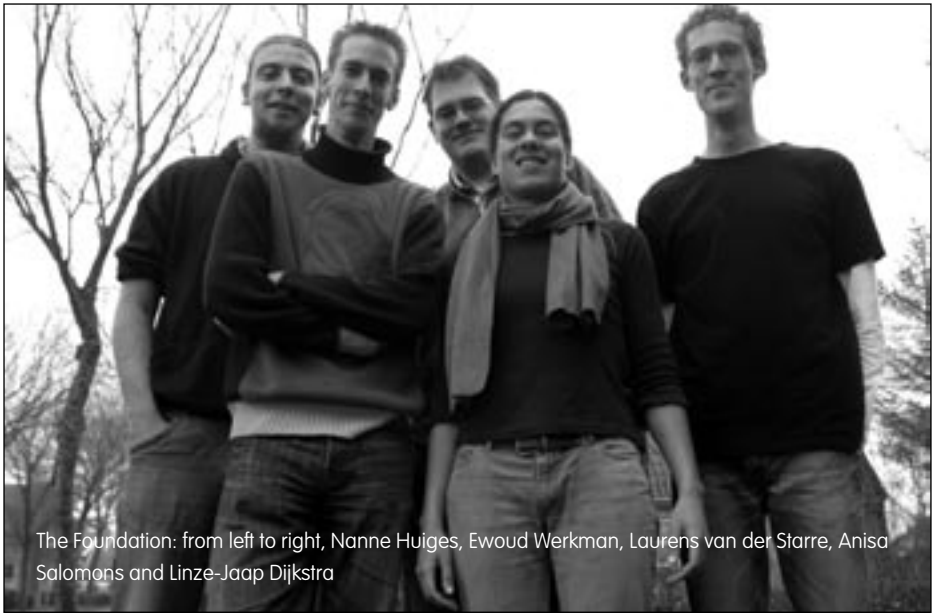
# Organisation

## Report by the Foundation GBE-FMF

*By Ewoud Werkman - Chairman*

One of the great advantages of being a student is having the possibility to go abroad more easily, compared to an employee at a company. Rearranging your planning and putting some extra time and speed into assignments will create time that can be used for travelling abroad. Furthermore, being a student means you feel a need for gaining more knowledge and expertise in subjects you're interested in, but, unfortunately, you are only able to see these things in the perspective of the environment you live in. These two observations are the basis for the intercontinental study tours that the Foundation GBE-FMF organises every two year. Witnessing both cultural and scientific aspects of a distant continent makes you see things in another perspective and broadens your horizon. But, as usual, theory is not equivalent to practice. Organising a tour with an acceptable level of science and cultural for 25 students and two scientific staff members is not an easy thing to do. Well, of course, the culture part is not that hard; lots of people go on vacation to distant countries every year and visit all kinds of cultural and historic places. Local agencies are able to arrange for that. But an

acceptable level of science, which is 2/3 of the total journey according to our standards, is quite hard. There are no local agencies that arrange visits to companies, institutes and universities. These arrangements have to be done manually. Therefore you need a motivated committee that shares the same observations. I'm sure that we found that motivated team in STARS '05. They did a superb job in organising a very impressive three-week study tour to Beijing and Kuala Lumpur. In meetings with Rogier, the chairman, we were kept up-to-date on the daily businesses and especially on the finances. Our main activity was to support the committee with advice and to preventing them from making mistakes made in the past. Since organising means a lot of communication, our biggest concern was their dialog with Chinese companies and institutes. The simplified Chinese language has over 3000 characters and uses tones that are so difficult to pronounce that you feel like a 3-year old child, even when saying 谢谢 ("thank you"). This could be an obstacle that would be too difficult to take. But strangely enough, communication with the flight agency and our bank here in the Netherlands caused much more trouble than any communication with our Chinese contacts… Furthermore, in spite of an early start, the ten



The Foundation: from left to right, Nanne Huiges, Ewoud Werkman, Laurens van der Starre, Anisa Salomons and Linze-Jaap Dijkstra

case studies that were needed for raising money were quite a big obstacle to take and concerned us a lot. Fortunately, in the end the committee was able to find enough case studies. We want to thank everybody who took part in making STARS '05 a success, especially the STARS '05 committee for their hard work and the ability to broaden the horizon of a lot of students. The foundation is eager to organize a study tour in 2007. If you are a FMF-member and are interested, do not hesitate to contact us and broaden *your* horizon!

## Report by the Chairman

*By Rogier Falkena*

At the beginning of 2004 the committee with the task of organising a Great Foreign Excursion (GBE) was formed. Five students were lured into this committee and I was one of them. I didn't believe the people of the Foundation at all when they told me that it wouldn't take up much of my time. I know for sure they didn't believe it themselves, but you have to say something to convince people of taking one of the most rewarding tasks there is during the study years.

The main reason for me to join the committee was that I like to travel very much. Another positive load on the deciding balance was the great experience I had during ManeaX '03, the study tour to Boston, New York and Mexico City in 2003. By organising a GBE you get the chance to organise a tour to the most exciting places in the world. You make it possible for a group of students to do things they can hardly do by themselves.

It all started on Sunday January 18th, the first informal meeting of the committee. We only knew each other by face, they were the people always standing on the far side of the bar during the monthly nip from our faculty union. There were a few tasks to divide and I ended up as the chairman of the party. I felt it was the right task for me and since nobody else seemed to be interested, I was the one who would get all the misery when things would go wrong.

Suddenly you're the king of the world: with only a few constraints, you can decide to which countries outside of Europe the tour will go. This gives a true sensation of freedom, I can encourage everybody to try this yourself! Every continent has been carefully examined in our search for the ultimate destinations, although we all had a strong favour for the Far East. The top five destinations were Bangalore (India), Singapore, Beijing (China), Shanghai (China) and Kuala Lumpur (Malaysia). I don't think I need to tell which were the final choices. We tried to think of a good name for the tour over dinner. The drinks drove our creativity to a higher level ... which of course didn't seem to be very useful the morning after. Some of the alternatives were GREAT, SUGAR, MACH5, KUBE and SATE.

Settled with the destinations and a name, the organising part truly started. During our weekly meetings we discussed our progression, with a constant stream of corny jokes from Abel and René. The progression knew its ups and downs. The more downs, the nicer the ups! I guess Abel and René will tell about the hard process of acquiring ten cases and Anna and Klaas-Jan will let you in on the habits of the Chinese and Malay when trying to make appointments with them. Next to the standard chairman tasks, I took care of the cultural part of the tour. Armed with the Lonely Planet and Google, the first versions of the Beijing and KL programs were made up. Together with Tony (Beijing) and Raj (Kuala Lumpur), the hostel managers, I revised the programs till it reached its final form. Without their indispensable help, the program wouldn't have been as great as it was! It is a great advantage to know people with so much knowledge of the cities you're going to visit. It was nice to see that both Tony and Raj used MSN Messenger, making communication with the other side of the world very easy all of a sudden!

People who visited China told us not all Chinese people speak English. To eliminate the risk of not understanding a speech at a company or getting completely lost in Beijing, we decided to look for an interpreter. Through friends of friends of friends, we met Jantine Wijnja. She studied Sinology at Leiden University and knew someone who could help us in Beijing: Hongliu Liao a.k.a. Jason. Liao at first was uncertain of his ability to help us out, but I'm glad I managed to convince him! Liao was a great help. Besides doing the necessary interpretation, he also told us all ins and outs on Chinese culture, food and customs.

At an early point in making the scientific and cultural program, it seemed we couldn't reach all of our companies, institutions and sights by public transport. The need for a coach originated. Again with the help from Tony and Raj, we managed to hire coaches for the whole group. The last part of the previous sentence looks very obvious, but believe me if I tell you this is not entirely the case. Having a coach had, next to the mobility of the group, another advantage: a

guide was included all day! The governments in both countries oblige every coach company to have a guide on board of their vehicle. We now had someone to show us around.

To excite the participants and members of the scientific staff, we organized four meetings in the months before we left. For the first meeting we invited two speakers to share with us their experience with the cities we were going to visit. Prof. Jasper Knoester gave us an introduction on Beijing and Jan-Willem de Smeth told us about 'his' KL. The second meeting was all about learning to speak Chinese and eating with chopsticks. Our teacher Zhang Han did a great job in both disciplines. After the second meeting I knew for sure we would need an interpreter! At movie theater 'Dinkla' the third meeting was held. We saw a true Chinese movie called *Hero*, with flying and fighting Chinese Kung-Fu masters. The last meeting was used to tell everybody what should be (and not be) in their suitcases and to give a sneak preview on the program.

The week before we left was very exciting. Tony tried to drive from the downtown hostel where we would stay to Zhongguancun (the science park where most of our companies are located, in the North-East of Beijing). It took him four hours! A little bit of stress boiled up, and Tony advised us to switch to a hostel in the South-East of Beijing. This hostel (the Sundeck Inn) was situated next to the second Ring Road and despite of being at the other side of Beijing, it was much faster to reach Zhongguancun from there... Not entirely happy with the new hostel (we moved from the lively heart of Beijing to the outer rims) I asked Han to have a call with Tony. Han was with us at that moment to help us translating our names in Chinese for our business cards. I can assure you it's thrilling to sit next to someone who is discussing in Chinese if it's possible to switch hostels again in the week before you leave! Tony and Han came up with Xindadu International Youth Hostel, west of the Forbidden City. This was the perfect hostel: right next to the city center, close to Zhongguancun and with enough space for the coach to park. Tony told us he didn't come up with this hostel at first because it's a little less luxurious than the Sundeck Inn. Well, what can I say, we're students so luxury isn't in our vocabulary!

After this last switch the Survival Guides (the guide book with the program from day to day, background information on the cities and other important tour information) could be printed. All was good to go for STARS '05! During STARS '05 it felt great to see that the program went as planned. Every day was special, I can't remember ever getting so much impressions and experiences on every single day of a tour. We had great hostels, comfortable coaches, nobody got lost, there were no serious injuries, the food was great and we met fantastic people! Our guides Liao, Candy (Beijing), Laura (Great Wall) and Ravi (Kuala Lumpur) did a perfect job in helping and showing us around. I personally enjoyed finally

meeting the people with whom I had so much contact with before the tour. It was a great pleasure to 'work' with them!

Now that STARS '05 is over, I feel a little lost. Ordinary life is waiting to be lived again. Luckily there are too many photographs to keep almost every memory alive! Concluding this section, I would like to thank all participants for their enthusiasm during STARS '05. You all made organising this tour absolutely worthwhile every minute of hard work. Now, let's see how to get back to Asia as soon as possible ... ◀

## Report by the Treasurer

*By Klaas-Jan Stol*

In December 2003, I was approached with the question how I would feel about organising the next study tour for the FMF, which would take place in April 2005. Back then, I was really surprised that I was asked for this, and I said I had to think about it. After realising that on the one hand, organising such an event may ruin my study progress, I decided that on the other hand, I should not decline such a great opportunity.

At the very first meeting, I got acquainted with the other committee members, all of which I had seen at some party of the FMF, but that was about it. At this meeting, the committee positions were divided, and I ended up being the treasurer of the lot. In the first few months this task took quite some work, consisting of applying for subsidies and planning for our budget.
Then after summer holidays, there were not many tasks for me, so I offered to take on an additional task. Thus, I was promoted to assistant commissioner of foreign relations. A fancy title, meaning nothing more than helping Anna, who is the commissioner of foreign relations, to set up the program for the tour. Luckily I did, because I enjoyed doing this most. In fact, I spent more time on the program than on financial issues. This was possible because the people who organised the last study tour, called ManeaX '03, were all still around, and they had a lot of knowledge and experience with the financing of such a tour.

When I started helping Anna, it became clear that it was not a very straightforward task, as it is hard making appointments in October when the tour would only start in April. During the period from October to March, the program changed a lot. Sometimes this was due to the company not being able to receive us at the time of our visit, another time our contact at the company, seemingly the only one who spoke English, appeared to have left the company, leaving a lot of silence on the phone...
Luckily, we have been able to arrange visits to very interesting companies.

At some point, the decision was to be made whether the study tour could actually take place. This was because about half of the revenues of the organisation would come from case studies.

These case studies would be arranged by René and Abel. You can read their story if you want to know how that went. If there would not be enough case studies, the tour would have to be cancelled, which would mean a lot of effort by me and the other committee members would be in vain. Luckily, we were able to arrange enough cases, with help of some other people. After the board of the foundation decided we had a "Go", getting closer to April 14th (the starting date of the tour) was a strange experience; after fifteen months of preparation, the study tour would finally become reality!

Then, on April 14th, it was finally the moment of truth. Luckily, we had set the time of meeting at the train station very early in the morning, because Anisa, who would share a taxi with me to the train station, had an alarm clock that had decided not to work that day. Fortunately, the rest of the journey to our first destination, Beijing, went pretty smoothly.

Our stay in Beijing was great, and I really liked the Chinese attitude of doing things. Making conversation on the street with complete strangers, the relaxed way of driving (don't mind the horning, it's just saying hi), and not complaining too much.

After having been in China for two weeks, I really got the feeling the trip was over. But we still had another week to go in Kuala Lumpur.

After arriving in KL I think most participants, including myself, were pretty much exhausted. Being a treasurer, doing things like losing your wallet doesn't make you feel any better... I lost two pounds in weight due to the high temperature and stress during those two hours, wondering where I could have lost my wallet. Luckily, I lost it in the bus (uhm, that is, the wallet), so the bus driver found it. A lesson you shouldn't run out of the bus like an idiot after sleeping.

The best part of being commissioner of foreign relations was being welcomed by the contact at the company. Each time, it was very nice to finally meet him or her in person, after months of sending e-mails and making phone calls. It was great to hear the companies enjoyed our visit as much as we did. The neat business cards we had made with our names written in Chinese on it (thanks to Zhang Han), proved to be very valuable as even Chinese people could pronounce my name correctly, which cannot be said of the average European.

Being a treasurer still, I had also to make sure that everybody had enough pocket money to buy food and drinks. As you may have read in the reports of René and Abel, earning money is one thing, getting it cash into your hands is a whole different ball game. Rogier (assisting me; how do you like that, the chairman as your assistant) and I emptied several cash dispensers while getting the pocket money for the participants. It seems the average Chinese cash dispenser is not pre-

pared for 25 cash withdrawals, taking the maximum amount of money.

My experience of the study tour is one that I will never forget. It was even better than I could have imagined when I started as a committee member. Not only the satisfaction I got when something was going exactly (or even better) than we had planned, but I'll also remember the kind and special people I met in Beijing and Kuala Lumpur. My interest in both countries have increased a lot (except for the temperatures in KL, boy was it hot over there...). And then the food, it's a reason by itself to return to China. The take-away Chinese food here in the Netherlands will never be the same (in fact, here in the Netherlands they didn't even recognise the things on our special custom-made menu, written by a Chinese waitress).

Organising a study tour like this was a great experience. I got to know the other committee members pretty well, and we have had (actually, still have) lots of fun joking around, not to mention our numerous running gags, which were pretty hilarious sometimes. I'm very pleased I was given the opportunity to organise this trip with them. Furthermore, during the trip I got to know the participants a bit, and I must say, I liked what I learned.

So, now it's time to get back to studying. Luckily, organising the trip only costed me about six months of study progress, so I decided I could just take it easy for another few months. (Hey, I have to get used to normal life again.) Anyway, I had some application forms for a few Asian companies lying around somewhere... ◀

## Report by the Commissioner of Foreign Relations

*By Anna Dinkla*

When the search for students to organise GBE '05 began, I was a member of the foundation GBE-FMF. We found out you sometimes have to look very nearby, because a month later I quit the foundation and took place in the committee of GBE '05! When one of us mentioned: "Anna, don't you want to organise the next study tour?", I thought "Yes, why wouldn't I?". After all, a three-week study tour to a distant country might be the coolest thing that you could ever organise! Abel and René, who were my colleague FMF board members at that time, also couldn't resist the temptation of doing another commission and not getting back to their study. With Klaas-Jan and Rogier, we formed GBE '05. From that point on, there was one thing I think we did together often, and when we did it, we did it well: eat. Almost every meeting KJ or Rogier would bring a pack of treacle waffles ('stroopwafels') and when we had dinner together we would traditionally make a Dutch stew. René, our ice-cream-king, insisted on having desserts, and lots of it. After coffee, we hardly had any room left for beer, so we would sit still for at least one hour, not being able to move anything but a finger to press the remote control. This was going to be the

continuing theme. In the weeks before the trip, we just had to have a proper lunch when we were working the whole day, of course. The culinary feast came to a climax during the whole of the tour, where all the food was absolutely delicious. All the girls had been worrying we were not going to like any of the foods or get sick (Maybe also secretly hoping for this to happen and come home totally slimmed down). Instead, the only sickness that could occur was a stomach-ache by overeating oneself.

I've had a very good time organising the trip. Sometimes Rogier had to calm us down during a meeting because Klaas-Jan just spotted a nice 'item' outside the room or Abel had a new poker story. Fortunately, Rogier, a true scouting leader, could bring us back on track. I was responsible for the company and university contacts in Beijing and Kuala Lumpur. Having so many contacts running at the same time, it's easy to forget one of them. Before you know, it's been a couple of weeks before you get in touch with them again. Even though (or probably because) you have been so busy e-mailing other contacts and browsing for interesting places to visit. Somewhere in September, Klaas-Jan jumped into organise a couple of company visits as well. With Rogier taking care of all the e-mail traffic between the hostels and ourselves, the organisation then became a lot clearer. Some of us were always very last minute, with everything. Myself included, I must admit. Looking back at how smooth it all went, plus the fact that the last week before leaving we only had to arrange some final details, it all worked out wonderfully and we didn't do a very bad job! We owe a lot of thanks to Tony, Jason, Candy and the bus driver in Beijing.

Looking back on the two weeks there, I think of the terrible traffic. I don't know how (I think it was just leaving very early), but we always managed to get on time, no matter how crazy the traffic was. I will never forget the drive to the observatory, when we had to drive through a very narrow and steep road in a little village to reach the observatory. And as if that wasn't an obstacle in itself, there were workers everywhere to repair the roads and build new properties. Repairing; okay, but leaving a huge pile of bricks in the middle of the road... Still, the driver managed to get the bus through, avoiding the bricks by an inch. The people in Beijing were very nice, though it was sometimes hard to break through the language barrier. They seemed a little drawn back sometimes (expect for the hawkers on the street), but in the students' case, their curiosity overcame this.

The first day in Beijing, we had to take a cab to the Drum Tower. Tony communicated this to the drivers, we got in and we could only pray that we would stop at the right place. In Beijing, we definitely needed a little paper with our destination written on it when we took a cab, the taxi drivers didn't speak English at all. For this, Tony or Jason was your man. I personally found it very strange to let them ask things for you in Chi-

nese, and not being able to interfere in the conversation. You'll just have to wait until they've finished their gibberish talking. But I guess that works ten times better than making a phone call from Holland, trying to arrange a visit. I would call a Chinese company or institute and if the person on the other side of the line was not able to find an English speaking person, they would just hang up on you.

All of this was a lot easier in Malaysia. Here, we had to fight other difficulties, like the heat. The heat in KL was exhausting. When we first arrived, I couldn't believe it could be that hot at midnight. And adjusting would take at least two weeks, so there was no chance of that happening. So after changing from suit to business casual, we obediently followed Ravi for the rest of the week, listening to his stories on Malay people and all the flora & fauna. One of the Malay habits was to ask the representative of the delegation for a speech, which really tested my ability to improvise. When they asked I felt really embarrassed not having prepared a speech and since it was mostly at the end of the visit, I would just thank them very much for welcoming us. These moments were actually quite stressful, those are the times you feel the responsibility that comes with being a committee member. Other things I feared during the trip were: people getting ill, people oversleeping, being late for a visit, companies not expecting us on the right time or companies not expecting us at all. Sometimes I was worried the group would not have a good time. But then, on the other hand, if they wouldn't be enjoying theirselves during a company visit, I don't think I would have wanted to hear about it. Fortunately, the visits were very interesting and fun. The group has been absolutely great. Besides showing great interest, everybody got along perfectly; I haven't noticed any arguments whatsoever.

Of course, we all got tired thoughout the trip and as a consequence the risk of misinterpreting increased. Everybody showed great flexibility and respect to one another. One problem of travelling in a large group we had to face practically every hour: toilet stops. Toilet visits gave us a lot to talk about, especially in Beijing, where the toilets are dirty and there is an ongoing fear of getting diarhea, but I'm thankful that everything went well. But on the other hand, this really put your patience to the test. Looking back, I'm very glad I've thrown myself into organising this study tour, instead of having to watch from the sideline. Together with 26 others, I've experienced one great chopstick experience, where dinner consisting of 16 different dishes can take up to 2.5 hours. Now I'm back at the sideline, home, cramming down my stew... ◀

## Report by the Commissioner of Business Relations

*By René Kist*

*René's Recipe For A Successful Study Tour*

*1.Find a handful of students with some time to*

*waste.*
During my year as a board member of the student association FMF, I heard the foundation GBE-FMF was forming a new GBE-committee. Although I was getting ready to pick up my study where I left off the year before, the idea of taking up another time-consuming, stressful and ambitious project that was guaranteed to delay my academic progress for another couple of months sounded like a genuine good idea. I guess the rest of the committee suckered in for similar reasons. Funny how the human mind works, hey?

*2.Get them to like each other A LOT (add alcohol if needed). Define the basic ingredients: tasks and destination.*
Since the five of us were obviously going to spend a lot of time together, it was of vital importance that we got along. Fortunately, this all worked out very well. In no time we operated like a tight pack of ambitious globetrotters, determined to conquer... wherever it was we were going. Now I know I promised the others I would never bring this up again, but: "Shanghai". There, I said it. As you know, we actually visited Beijing, not Shanghai. Beijing's main attractions are the cultural sights (Great Wall, Forbidden City, Tiananmen Square, etc.), whereas Shanghai is a high-tech hot spot in China. However, visiting both cities would take up too much time and money, and so we decided to drop Shanghai. Sure enough, from that point onward, everyone I told about the study tour I was organising asked me why we weren't going to Shanghai, because "that's where it's all happening right now, you know". Looking back I think we made the right decision, I wouldn't have missed Beijing or KL for the world (or Shanghai, for that matter). Besides, it turned out Beijing was more than "happening" enough for us to spend two weeks.

*3.Find a way to make money, and lots of it.*
Every poor student has to come up with some creative ideas to make money sooner or later, like tutoring high-school students or donating bodily fluids. To finance our project however, we needed ideas of a grander scope altogether. This is where the case studies come in. You see, what students lack in financial assets, we make up for in knowledge and skill. So the participants offered themselves as highly educated temps, and it was my job to find the right job for the right person. We offered the expertise of a BSc or MSc at a low cost, which obviously made hiring us (to fix computer databases, crack statistical problems, investigate physical phenomena, etc.) a good option for any company or university department that was in dire need of an expert in the field of IT, math or physics. My task, or "quest for case studies", as I like to call it, was long and hard. Companies were called, people were talked to, obstacles were overcome, networks were built, dreams were broken, disappointments were dealt with, e-mails were sent, received, lost, recovered, lost again, recovered again, filed, read and replied to, and in between all this there was the occasional satisfaction of a job well done.

*4. When you've decided on a destination, pick the places you'd like to visit at this destination.*
Actually, coming up with interesting and fun ways to spend your time during the tour isn't the hard part. It's getting in touch with the right person, explaining who we are, what we do and that we'd like to come over sometime next year to have lunch that's the hard part. Fortunately for me, this was somebody else's problem. If you're interested in this process, read one of the others' reports (after you've finished reading mine of course).

*5. Take your cash, and spend it all on ale and...er, airline tickets and hostel fees. Did I say ale? I meant airline tickets and hostel fees.*
Again, most of this work was done by the other committee members, hence my confusion. All I know is that getting the program together, discussing every last detail with our associates Tony and Raj and making the appropriate arrangements accordingly, was a hell of a job. Needless to say, I'm very grateful they left me out of this most of the time. Of course I kept a close eye on them at all times, as fellow committee members do.

*6. Get over there. Have a blast.*
This is the last and best part, and I can honestly say that I've had the best of times organising and taking part in STARS '05. During this period I learned things, made friends, ate goat testicles and lived to tell the tale. I'm afraid the only way to really appreciate this fundamental ingredient of a successful study tour is to take part in one. I recommend it highly. ◀

## Report by the Commissioner of Business Relations

*By Abel Meijberg*

In the year 2003-2004 I was a board member of the student association FMF. This was a great year where I organised a lot of things, but unfortunately I didn't study at all this year. This didn't bother me that much, but I decided that after this year I really should pick up my study again and should stop organising all these fun activities. For a moment I actually thought this would happen...how naïve.
At a drink, Evert-Jan, one of the old GBE committee members started working his magic. He asked me if I would like to take part in the new organising committee. My first reaction was that it sounded like a lot of fun, organising an excursion to a location somewhere outside Europe, but I also told him that after my year on the board I was actually planning on not becoming too active for the FMF. But the more he told me about it the better it sounded to me and after a few beers (Evert-Jan knows how to convince someone) I impulsively decided to just do it! Goodbye study, hello GBE committee.
I knew two of the committee members very well, Anna and René, because they were also on the board of the FMF together with me. I didn't know Rogier or Klaas-Jan very well, but that didn't last very long. In the beginning we immediately

planned a few nights of eating and drinking together and we quickly found out that all of us could get along very well, which obviously is very important when you're organising something as big as a three-week trip for twenty-seven people to a location outside Europe. The first thing we had to decide on was the location. This is easier said than done, and we honestly spent hours and hours searching on Google to find information about the various locations. One of our criteria: we wanted to go far, far away. We also didn't want to make it too easy for ourselves, but really wanted to see something totally different from our western society. After a lot of discussion and searching we came up with Beijing in China and Kuala Lumpur in Malaysia. But this was only the beginning, now the real work could start. René and I would be the commissioners of business relations, which meant that we would take care of the funding of the trip. To fund the trip all the participants have to do a case-study, which is a short project (three weeks) for two students by companies' order. Anna would be in charge of the program in Beijing and Kuala Lumpur, Klaas-Jan would be our treasurer and finally Rogier would be Chairman.

René and I had quite a heavy load on our shoulders. The case studies are the deciding factor in the "go/no-go" decision. It's very simple: no case studies means no money means no study trip. Even though it's a very good deal, two very capable and hard-working students who work for a relatively small amount of money, in previous years it always proved to be quite hard to find ten case studies. This time was no exception. A lot of the companies we contacted thought that we just wanted them to advertise and we sometimes had to explain the concept of the case study several times on the phone before they finally understood what we meant. But of course we didn't give up and after a lot of browsing, (e-)mailing and calling we found a case study for every participant. The computer science students were actually pretty 'hot', a lot of companies could use some students with computer and programming skills. It was a bit harder to find case studies for the physics students (maybe because of their very 'specific' knowledge), but we managed to find some nice projects for them. You can read all about those elsewhere in this report.

And then on the 14th of April the time had come! It was actually going to happen, we would spend three weeks in the far east. I myself had only been outside Europe once and that was to the United States, which is not all that different from Europe. The difference in culture we saw in China and Malaysia though was incredible. The mentality is so different from the Dutch one. Take for example the work ethic of the Chinese students. We met some of them at Peking University and after a while we started chatting about how our weeks were planned. All we could do was sit in awe when they told us that their week consists of a good 60 hours of studying and that they do almost no partying. We were almost embarrassed to tell them about our work ethic... Or in Malaysia, where we found out that in the bèta studies about 70% of the students are female, which was

also quite a shock (a lot of the men in our group were quite jealous I think). The whole trip was filled with all kinds of interesting impressions of their culture and with every visit, whether it was to a company, a university or a cultural place, we learned more and more about the Chinese and Malaysian mentality. In the daily reports you can read all about this.

From an organising point of view the trip was also a big success. The participants were actually quite responsible persons and we had almost no problems at all. Every day two committee members acted as group leaders and this worked very well. I must say I was quite proud when the participants showed their gratitude on our last night in Malaysia and they gave us some presents and a big thanks for organising the trip. They say time flies when you're having fun. Well, the three weeks flew by very fast so I guess that's a good thing. I still can't believe that it was only a few weeks ago when we were walking on the Great Wall or eating one of the most delicious meals at an altitude of 250 meters in the KL tower. Normally when I come back from a trip, I have that "home sweet home" feeling, but this time when we entered the Netherlands and felt the cold weather and saw the rain, all I could think was: I WANT TO GO BACK!! ◀

# Financial Report

This section contains the financial report of the study tour. It consists of two parts; the first is the balance sheet, containing an overview of assets and liabilities of the foundation GBE-FMF. The second part contains the settlement, with an overview of revenues and expenditures.

A few remarks on the balance sheet can be made. Firstly, we chose for a reservation of a case study. As it is very hard to arrange for enough case studies, this reservation can be used by the next committee that will organize a foreign study tour. It should be noted, that the foundation is not planning on increasing reservations for case studies, but targets a reservations of one or two reservations only.

Secondly, the foundation decided some amount of money should be reserved for the computers that it is using. The foundation is allowed to use the computer of the FMF. However, as there are only two suitable computers available for the GBE, it is necessary to invest in an extra computer. This way, we can ensure enough available work places for the next committee.

Finally, an amount of money must be reserved for the organization of the foundation. This is to pay costs such as banking costs and memberships. This money may also be used in a possible re-organization of the foundation, due to the re-organization of the Faculty of Physics and Natural sciences. ◀

## Balance

*December 1, 2005*
*All numbers are in euros*

| Assets | | Liabilities | |
|---|---|---|---|
| ABN-AMRO | 7590 | Reservation Foundation | 890 |
| | | Reservation Case studies | 6700 |
| | 7590 | | 7590 |

## Settlement

*December 1, 2005*
*All numbers are in euros*

## Revenues

| | | |
|---|---|---|
| **Subsidies** | | **11350** |
| RuG - Faculty of Mathematics and Natural Sciences | 2500 | |
| RuG - Department of Mathematics and Computer Sciences | 1600 | |
| RuG - Deparment of Physics | 1200 | |
| RuG - Department of Astronomy | 400 | |
| RuG - Nuclear Physics Accelerator Institute (KVI) | 500 | |
| RuG - Materials Science Centre | 500 | |
| Foundation Fundamenteel Onderzoek der Materie (FOM) | 750 | |
| Foundation Groninger Universiteits Fonds (GUF) | 500 | |
| Space Research Organization Netherlands | 500 | |
| The Netherlands' Physical Society (NNV) | 1250 | |
| FMF | 1400 | |
| KIVI-NIRIA | 250 | |
| **Participants contribution** | | **25300** |
| Scientific staff | 2800 | |
| Students | 22500 | |
| **Case studies** | | **32300** |
| case NAM | 3400 | |
| case UOCG I | 3400 | |
| case UOCG II | 3400 | |
| case UOCG III | 3400 | |
| case ProGamma | 3400 | |
| case SKF | 1700 | |
| case Universiteitsbibliotheek I | 1700 | |
| case Universiteitsbibliotheek II | 1700 | |
| case UMCG | 3400 | |
| Case Océ | 3400 | |
| Case Xpar Vision | 3400 | |
| **Miscellaneous** | | **53** |
| Interest | 53 | |
| **Total** | | **69003** |

## Expenditures

| | | |
|---|---|---|
| **Organization** | | **5866** |
| Participant meetings | 1157 | |
| Banking costs | 432 | |
| Representation | 641 | |
| Foundation | 208 | |
| Committee | 445 | |
| Vaccinations | 2678 | |
| Gifts | 166 | |
| Case costs | 139 | |
| **Printing costs** | | **3159** |
| Final report | 2500 | |
| Letter paper | 188 | |
| Miscellaneous | 471 | |
| **Travelling** | | **27223** |
| Plane tickets | 25306 | |
| Travel expenditures the Netherlands | 783 | |
| Visa costs | 1134 | |
| **Stay in China and Malaysia** | | **24691** |
| Hostels | 3196 | |
| Meals | 15025 | |
| Travelling | 4045 | |
| Excursions | 2135 | |
| Miscellaneous | 290 | |
| **Miscellaneous** | | **8065** |
| Computerplan | 2000 | |
| Restitutions subsidies | 2665 | |
| Reservation STARS | 3400 | |
| **Total** | | **69003** |

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### Board of the foundation GBE-FMF

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- Nanne Huiges
- Anisa Salomons
- Laurens van der Starre
- Ewoud Werkman

### Subsidising institutes

- Faculty of Mathematics and Natural Sciences
- Department of Physics
- Department of Astronomy
- Department of Mathematics and Computing Science
- Materials Science Centre (MSC)
- Foundation Groninger Universiteitsfonds (GUF)
- Nuclear Physics Accelerator Institute (KVI)
- The Netherlands' Physical Society (NNV)
- Foundation for Fundamental Research on Matter (FOM)
- Space Research Organisation Netherlands (SRON)
- Royal Institution of Engineers (KIVI-NIRIA)
- Office for internal and external relations (IEB)

### Board of Recommendation

- Jhr. Mr. J.C.F. von Mühlen (Dutch Ambassador in Malaysia)
- Dr. Ph. de Heer (Dutch Ambassador in China)
- Prof. dr. F. Zwarts (Lord Rector of the University of Groningen)
- Prof. dr. H. de Waard (Professor emeritus of physics)
- Prof. dr. M.N. Harakeh (Director of Kernfysisch Versneller Instituut)
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## Contacts abroad

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| Abel Meijberg | Commissioner for Business Relations |
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