

42nd ISYA in Kunming, China, 14th October-1st November 2019

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Summary

The 42nd ISYA was hosted by the Yunnan Observatories (YNOs) of the Chinese Academy of Sciences, in collaboration with Guizhou Normal University and Yunnan University. The school intended to train early graduate students in Astronomy & Astrophysics, especially, but not exclusively, in the East Asian Region.

The school activities were published in a dedicated webpage that YNOs designed: <http://isya2019.csp.escience.cn>

Venue

The school was held within the premises of YNOs and the City of Flower Hotel Kunming, residence to foreign and non-local Chinese students and lecturers alike. City of Flower Hotel Kunming is a 5-star hotel of astounding architecture, with all common amenities in such establishments and an excellent food buffet. Local students resided at YNOs, close to the hotel (20 min drive).

At YNOs the school had a large classroom and an office for the lecturers, with internet connectivity and a nearby dedicated lunch area. There was no dedicated computer lab. The students also used for two nights the in campus optical 1m and 60cm telescopes, and controlled remotely the Sino-Thai 70-cm telescope in Lijiang station.

On the second weekend, school activities were also carried out at the 2.4m telescope at the Lijiang station of YNOs.

Kunming is the capital and largest city of Yunnan province in southwest China, positioned near the border with Southeastern Asian countries, with a population of ~6.8 million people.

Organizers (Name Surname)

DIRECTORS

Shengbang Qian (local director, YNOs)

Itziar Aretxaga and David Mota (ISYA program director and deputy director).

LOCAL ORGANIZING COMMITTEE

Liyong Zhu (YNOs, Chair)

Wenping Liao (YNOs)

Jia Zhang (YNOs)

Nianping Liu (YNOs)
Jiajia He (YNOs)
Ergang Zhao (YNOs)
Linjia Li (YNOs)
Xiao Zhou (YNOs)
Zhongtao Han (YNOs)
Xiangdong Shi (YNOs)

SCIENTIFIC ADVISORY COMMITTEE

Shengbang Qian (YNOs, China, Chair)
Jinming Bai (YNOs, China)
Liyang Zhu (YNOs, China)
Li Zhang (Yunnan University, China)
Wen-Ping Chen (NCU)
Boonrucksar Soonthornthum (NARIT, Thailand)
Saran Poshyachinda (NARIT, Thailand)
Hakim L. Malasan (Indonesian Astronomer Bosscha Observatory, Indonesia)
Yoshida Naoki (University of Tokyo, Japan)
Qijun Zhi (Guizhou Normal University, China)
Liang Liu (YNOs, China)

Announcement

The school was announced through the Newsletter and social media of the IAU, through the regional network of the OAD based in China, through the ISYA All Alumni page in Facebook, and by email sent to all IAU members in target member countries in Asia. Announcements through email were also sent to prominent astrophysicists in East Asia by the local director and Scientific Advisory Committee. We made a special effort to clarify that regional students in Asia were to be preferentially selected, and that the school was targeting graduate students and advanced BSc students with strong interest on Astronomy. This decreased the number of applications of students that would have been disqualified based on remoteness or academic background, compared to previous ISYAs.

Student Selection

We received 183 applications through the school webpage, 163 of which were from valid regional countries, and 20 were from non-regional candidates in Argentina, Brazil, Egypt, Ethiopia, Finland, Italy, Kenya, Madagascar, Nigeria, Rwanda and Spain. The distribution of regional candidate applications (App), accepted (Acc) and finally attending (Att) students was as follows:

COUNTRY	App	Acc	Att
Afghanistan	1	0	0
Armenia	1	0	0
Bangladesh	2	1	1
China	29	21	21
DPR Korea	4	4	0
India	48	2	*1
Indonesia	13	2	2
Iran	16	2	1
Malaysia	7	2	2
Mongolia	2	1	1
Myanmar	2	1	1
Nepal	9	3	2
Pakistan	2	1	1
Philippines	7	2	2
Sri Lanka	1	0	0
Taiwan	4	0	0
Thailand	7	2	2
Turkey	3	0	0
Uzbekistan	1	1	1
Vietnam	4	2	1

* Student enrolled in PhD program in Taiwan

The selection of students was done by a small committee of local organizers and ISYA directors. There were many more deserving candidates than available places at the school. We initially aimed at accepting ~40 students. After sending the acceptance letters we had a few rejections due to passport and visa delays. Students were replaced by others in the waiting list whenever possible. The four originally invited DPR Korean students could not obtain an exception to the UN sanctions to get a visa to attend the school, and their places were reserved until the last minute. We also had a late dropout of a confirmed Vietnamese student, due to health reasons, that could not be replaced.

The final list of 39 attending students to the ISYA can be found in Appendix A. The distribution of attending students was 54% national and 46% regional, with a gender split of 54% female and 46% male students.

All but two recently graduated BSc students were carrying out research for their MSc or PhD theses before the school started. One of the PhD students (from Mongolia) was carrying out research on Geophysics, and not on Astronomy, but she is lecturing Astronomy topics in her

University at the bachelor level. The split of levels was: 2/39 BSc students and graduates, 23/39 MSc students and MSc graduates, and 14/39 PhD students.

Lecturers and Scientific Program

Lecturers were selected by the local and ISYA program directors to meet the needs of the proposed program, which had an emphasis on multi-wavelength observational astronomy and extensive use of optical telescopes at YNOs. A balance of blackboard and practical hands-on classes was intended, with practical classes being mostly in the afternoons. The initial selection of lecturers, their topics, final assignation of time and gender was as follows (alphabetical order, name+surname):

- *Itziar Aretxaga* (Inst. Nacional de Astrofísica, Óptica y Electrónica, Mexico): Active Galactic Nuclei [4 x 1.5 hrs], and career development workshops (F)
- *Wen-Ping Chen* (National Central University): Stellar Clusters [3 x 1.5 hrs] (M)
- *Arnab Rai Choudhuri* (Indian Institute of Science, India): Solar Physics [3 x 1.5 hrs] (M)
- *Aeree Chung* (Yonsei Univ., Korea): Radio Astronomy Lab [5 x 1.5 hrs] (F)
- *Ewine van Dishoeck* (Univ. Leiden, The Netherlands): Interstellar Medium and Star Formation [5x 1.5 hrs] (F).
- *Xiaohui Fan* (U. Arizona, USA): Active Galactic Nuclei [4 x 1.5 hrs] (M)
- *David Jewitt* (Univ. California Los Angeles, USA): Solar System and Exoplanets [5 x 1.5 hrs] (M)
- *Li Ji* (Purple Mountain Obs, China): X-Ray Astronomy Lab [5 x 1.5 hrs] (F)
- *Liang Liu* (YNOs, China): Observational Astronomy Lab [1 x 1.5 hrs] (M)
- *David Mkrtychian* (NARIT, Thailand): Pulsating Stars [3 x 1.5 hrs] and Spectroscopy Lab [3 x 1.5 hrs] (M)
- *David Mota* (U. Oslo, Norway): Cosmology [4 x 1.5 hrs] (M)
- *Yoshida Naoki* (University of Tokyo, Japan): Stellar Evolution and Structure [3 x 1.5 hrs] (M)
- *Shengbang Qian* (YNOs, China): Cataclismic Variables [2 x 1.5 hrs] and Photometry [3 x 1.5 hrs] (M)
- *Yogesh Wadadekar* (Tata Inst., India): Virtual Observatory [5 x 1,5 hrs] (M)
- *Jia Zhang* (YNOs, China): Observational Astronomy and Data Processing Lab [4 x 1.5 hrs] (M)
- *Liyang Zhu* (YNOs, China): Eclipsing Binaries [1 x 1.5] and Observational Astronomy Lab [1 x 1.5 hrs] (F)

We, thus, had 16 lecturers (including directors): 5 from China-Nanjing, 1 from China-Taipei, 2 from India, 1 from Korea, 1 from Japan, 1 from Mexico, 1 from The Netherlands, 1 from Norway, 1 from Thailand, and 2 from the USA. The initial gender split among lecturers was 31% female, 69% male.

Apart from the lecturers, we had as teaching assistants:

- *Nianping Liu (YNOs, China)*, observations tutor.
- *Shu Niu (Purple Mountain Obs, Clina)*, X-ray tutor

Arnab Choudhuri's lectures were originally not scheduled in the school, when it was first announced, but at the request of the regional Solar Physics community, we redesigned the schedule to offer him two lecturing slots. Due to a late arrival (see below), he was finally assigned 3 slots.

Naoki Yoshida had to cancel part of his lectures due to extreme weather conditions that delayed his flight by a few days. Two of his originally assigned slots were replaced by 1 extra lecture by Arnab Rai Choudhuri, and 1 extra Career Development workshop that contained an introduction to the IAU by IAU President Ewine van Dishoeck and the preparation for Student Presentations by Itziar Aretxaga.

The final schedule of classes and activities is detailed in Appendix B. Academic activities included observations with the YNOs Kunming and Lijiang telescopes, and a set of observational projects with these telescopes that groups of 3 to 4 students had to develop during homework time (Appendix C). Group projects were designed and tutored by Liying Zhu (YNOs). The groups were defined by school directors together with the group leader to enhance the mix of students from different countries and experience levels (BSc, MSc, PhDs).

We had 2 sessions of student presentations for group projects and we also performed a roster of 1.5-min flash talks on individual research projects or research interests that the students are carrying out for their degrees. All students were asked to give a flash talk. The two BSc students that did not already have a thesis project, chose a topic of their liking to talk about. These short talks prepare them for quick presentations of poster results at conferences. For most students these sessions were the first opportunity they had to speak in English in public.

The list of projects and individual presentations is included in Appendix C.

The program also included a total of 5 workshops on Career Development, including discussion sessions and presentations on the role of the IAU and its 100th anniversary program, CV and paper writing, applications for jobs/schools, challenges such as impostor syndrome and implicit biases (gender and other minority biases), and work ethics.

Development of the School

All students arrived and departed as scheduled, attending the full school.

Most school activities happened within the premises of YNOs. Most lunches and about half the dinners were also held at YNOs with take-away food. Food was abundant and very varied all through the school.

The final schedule was packed with activities, and students complied diligently with all of them. We gave students explicit instructions not to work after 10pm and rest on weekends to avoid burn-out with the intense academic program.

The activities in the school were carried out according to plan, with some minor scheduling changes. Due to a clash of schedules, we had an overconcentration of “blackboard lectures” on the first week, that resulted in a heavier load than we had originally programmed.

Originally ~3-4 hours of 3 days were planned to do optical observations. At YNOs students carried out a series of remote photometric observations on variable stars with the 70cm Sino-Thai telescope in Lijiang station. Due to uncharacteristic poor weather conditions in Kunming, the groups assigned to the 1m and 60cm telescopes could not perform their intended observations. We were also clouded for spectroscopic observations in Lijiang station, scheduled during the second weekend. Pre-observed data were distributed among the students that did not have their own data to analyze on the second week. Based on these observations, they practiced data acquisition planning, data reduction, and photometric techniques within their Observational Astronomy class and homework time.

Other classes that included data-handling and the use of databases were Virtual Observatory, Radioastronomy, X-ray astronomy, Photometry and Spectroscopy Labs. The Chinese internet firewall prevented us from doing online practice for VO as planned because of the very significant slow-down in accessing data. VO labs were modified to include a demonstration of some software such as Aladdin, Topcat, ADS etc, and a quick crash course on python and several common user routines for data analysis.

The school did not have dedicated computers. Lecturers and ISYA Directors were under the impression that school computers were going to be available before the school started. All the students had laptops, but the difference in architecture, speed, operating system and time needed to install all necessary software implied delays in the intended practices. The installation of the X-ray, radio and optical reduction and analysis packages was patched through a virtual machine designed by Teaching Assistant Shu Niu, who accompanied lecturer Li Ji. The virtual machine was implemented on the second week, and at least one laptop per group was operational. The lack of common computers prevented some hands-on classes to be performed as intended, and instead several labs were done by lecturers as a demonstration in the screen, and the students were unable to follow the instructions step-by-step in their own laptops.

The time for project development was shorter in practice than originally anticipated, in part because local and non-local students had different residences and a bus had to transport non-local students back to the hotel by ~9pm, and in part because the location of the school changed from most days at the hotel to most days at YNOs. All in all, ~10 hrs of after-school time were devoted after dinners to school project development. The students were able to make reasonable progress on their assignments and they presented good group reports at the end of the school.

All lecture notes were made available to the students in pdf format through the popular Chinese telephone application WeChat, as email became unavailable for some of them due to the Chinese internet firewall and the ban on Google products in China. Chinese students distributed the notes to their non-Chinese group members. Directors thought the distribution of notes happened at a reasonable rate, within a few hours of finishing each lecturing day.

Most graduate students had a good enough command of English to interact with lecturers and fellow students efficiently. One of the students had difficulty communicating, but participated fully in all activities, including the flash talks, and made significant progress by the end of the school.

In order to comply with the IAU-NASL agreement, we offered students personalized IAU mentorship upon request. No student has requested it so far, two weeks after the ISYA finished. The ISYA directors will keep sending to their email addresses regularly announcements for schools and studentships, as in previous editions of the ISYA.

Complementary Activities

Cultural activities during the weekends included:

- A guided tour to the Golden Temple of Kunming.
- A guided tour to the cultural park Nationalities Village followed by an “Across the Bridge Noodles” meal.
- On the second weekend, the school went by train to the historical town of Lijiang (~600km away), where spectroscopic observations were scheduled. Lijiang is a major tourist destination, and free time to explore the town center was ample, as the school hotel was in the mere historical center.

A good representation of the LOC accompanied participants in all these activities.

The LOC organized both a reception and closing banquet in the City of Flowers Hotel for all participants. The LOC also treated the lecturers to a cultural music and dance show in Kunming and numerous meals out.

Students' Feedback

The direct transcription of the students' feedback forms can be found in Appendix D. We present here the directors' analysis and some comments selected from the students.

The students in general found the application procedure adequate. A few complain about the length of the questionnaire, which was new. However, 70% of students found it easy to complete, 8% did not, while 22% are ambivalent about its difficulty.

The students value the lecture content, distribution of activities and lecturers positively: 92% thought the seminal ("blackboard") lectures to be useful, 89% found the hands-on labs useful, and 97% found the career development workshops useful. Most students found the balance between seminal and hands-on labs and the time spent on these activities as adequate (86 and 73%, respectively), while only 2 (5%) express disagreement on the time spent on these activities, and the rest remain ambivalent. Five students (13.5%) make comments about the school being too long hours. Lecturers' material, replies to questions and approachability remain highly valued (92-97%). Most students declare they could follow the material of the school well (54%), rather than not (11%), while a good fraction (35%) remain ambivalent about their ability to follow most of the material. We understand this last number as they could follow the material at some level, which is the goal of the school.

Observational experience and group projects related to this activity are valued positively. Since we were unlucky with the weather, it is difficult to interpret if the students' wishes for more observational experience (89%) would have been satisfied had the three observing nights been successful. Most of them think the time scheduled was indeed adequate (81%), 73% value the acquired experience as enriching, and 86% value the tutoring and 92% the preparation received as good.

Student presentations were valued positively, both for group projects (97%) and for individual presentations (95%).

School transportation, accommodation and food were in general valued very positively.

There is a large spread in the students' perception of the availability of free time: 46% think there was enough free time, 27% are ambivalent, while 27% think there was not enough free time. The academic program was indeed heavily packed by design, including observing activities on the second weekend (that although cloudy, occupied all Saturday afternoon). The students seemed to find time to go out after the school activities finished, both in Kunming and Lijiang, anyway.

Most students (92-97%) find that the ISYA has been beneficial for their future development as astronomers and for better identifying their interests.

Selected comments from students:

- “I am really happy I could participate in this very nice and very helpful school. Everything and everyone [belonging] to this school gave me a lot of motivations and encouragements. I believe that we will collaborate in the future in astronomy. Thank you IAU, all excellent lecturers, Itziar, David Mota, also YNOs group. This school left me truly nice memories. I am wishing to all of you successful work, healthy body, peaceful mind and soul.”
- “Thank you all the lecturers. I love many of you. You helped me to understand many things and encourage me to strengthen my research, and give more chances for us to do the presentations, and we acquired big progress during this time. At last, I want to thank the LOC, thank you very much. “
- “This training workshop is one of the best training I attended.”
- “Thank you LOC, you took care of us very well. Thank you for everything. Thank you [to] every lecturer. I got [much] motivation in my astronomy career. I truly appreciate.”

Lecturers’ Feedback

The direct transcription of the lecturers’ feedback forms can be found in Appendix E. We present here the directors’ analysis and some comments gathered from them.

Most lecturers found their effort and time investment in the ISYA was worth it, and are willing to mentor students from the program (82%), although many of them (58%) think they would have arranged their lectures in a different way given the selection of the students, and 75% believe their lectures did not reach most of the students at some level. This perception is in contrast to the evaluation of the students themselves, the majority of which claim they could follow the material at some level (86%) or follow it well (54%). More importantly, 95% of the students declare they have identified material for further study in the school. The lecturers (83%), nevertheless, believe their course helped advance the training of the students and their chances in the future. 92% of the lecturers thought the ISYA was good and productive, while 8% are ambivalent about their experience in the school.

We received negative feedback comments from one of the lecturers (8% who replied) that are forwarded as received to the Steering Committee of the OYA, without reproducing them in full in this report.

The infrastructure of the school and living arrangements was unanimously valued positively.

Selected comments by lecturers:

- “I like the breadth of the lecture contents and actually wish our junior students would be able to attend too. Other schools in astronomy are more oriented to specific topics (such as GW), but those like ISYA would be also effective to undergrad

students from Europe, US, Japan etc. Overall I found the ISYA activity is an excellent one!”

- “This school is a great opportunity for students, I could tell. I admire all the effort made by the organizers. I hope this spirit lasts for long! Lastly, some names came to my mind during the school, i.e. people who would be very well suited to this kind of environment” [names omitted].
- “I suggested an increase in the budget to increase the number of foreign students, especially the students from underdeveloped countries. Because some students really want to study, it is sad to let down their desires to study.”
- “The School has been well organized. I enjoyed my participation. Thank you for the opportunity. I was very touched to see students from different countries and cultures to work and live together nicely. By all means get me involved should such opportunities arise in the future. While it is good to keep the students busy, perhaps we fill their schedule with discussions, projects, and exercises, instead of many lectures. I would have still reduced the load of my lectures.”

ISYA Directors’ Summary, Assessment and Recommendations

The directors are pleased with the development of the school and the commitment of lecturers and students to make the most out of the three weeks. Happy-tired faces were the norm at the school. The LOC made an impressive effort to make us all feel at home, keep us safe and happy, and they certainly succeeded.

The submission of student applications was efficiently done through the YNOs set-up ISYA web page. We implemented a new questionnaire to aid the selection process, including small (200 words) short essays on strengths and weaknesses of the academic preparation of the students and interests. It was also helpful to ask for a free-format CV and letters of reference to make the selection. The reception of valid applications far exceeded recent schools, and announcing the school through the regional IAU membership list will be the norm for now onwards.

All students arrived and departed as scheduled for the school.

Directors ranked most lecturers as being very good in their material and lecturing style, able to adapt the material to reach at some point throughout their courses all students. By design, all courses started from the very basics, and showed towards the end some new results that are topical in the field. Student satisfaction with being able to follow the classes exceeds the expectations of the difficulties they might had by lecturers.

Most external lecturers stayed for only 1 week: full school of 3 weeks, 4 local lecturers + 2 ISYA directors; 2 weeks, 4 lecturers; 1 week: 6 lecturers. Lecturers staying for only one week were originally asked to stay for at least 2 weeks. Although it would have been better to

have them all for at least 2 weeks, there was intense interaction between all lecturers and students, especially because we spent so many hour at YNOs together.

These days most students have their own laptop, but installing all necessary software for lab work was a problem, despite the virtual machine designed by teaching assistant Shu Niu. We will stress the need for a computer lab with wired fast internet connectivity in future schools, and that the computer lab needs to be in place and all software installed and tested well before the school starts.

Some lecturers purchased their own plane tickets after consultation with the IAU Office, and those that did not expressed (verbally and in the feedback forms) disagreement with the scheduled arrangements and procedure, although they were consulted whether the itinerary was OK before purchase. We will change the procedure in future schools and suggest lecturers send a preferred itinerary for purchase by the IAU Office, which, in turn might suggest other options.

Among the lecturers, observational assistants and LOC of the 42nd ISYA we can find the following ISYA alumni: Shengbang Qian (Local Director and lecturer, 2001 Thailand), Xiaohui Fan (lecturer, 1992 China), Jia Zhang (lecturer, 2011 China), Nianping Liu (assistant observer, 2013 Indonesia), Ergang Zhao (LOC, 2011 China/2014 Thailand), Xiao Zhou (LOC, 2014 Thailand), Zhongtao Han (LOC, 2014 Thailand), highlighting the continuous input of ISYA alumni into new generations of alumni.

ISYA directors think the 42nd ISYA was very successful, meeting the expectations of local and IAU organizers in the progression of Astronomy opportunities for research students in the region.

Appendix A: List of Students

Name	Surname	Level	University	City	Country	Gender
Ahmed	Estiak	MSc student	Shahjalal University of Science and Technology	Naogaon	Bangladesh	M
Bhavana	Lalchand	PhD student	National Central University, Taipei	Taoyuan City	India	F
Singgih Prana Putra	(no surname)	MSc graduate	Bandung Institute of Technology	Pekanbaru, Riau Province	Indonesia	M
Ni Putu Audita Placida Emas	(no surname)	MSc graduate / Assistant	Bandung Institute of Technology	Bandung	Indonesia	F
Sima	Taefi Aghdam	PhD candidate / Research assistant	Institute for Research in Fundamental Sciences (IPM)	Tehran	Iran	F
Muhammad Daim	Norharizan	MSc graduate		Segamat, Johor	Malaysia	M
Wei Shen	Tan	MSc student	University Malaya	Johor	Malaysia	M
Javzandolgor	Bad	MSc graduate / Lecturer	National University of Mongolia	Ulaanbaatar	Mongolia	F
Eaindra Moh Moh	Lwin	BSc graduate	Mandalay University	Mandalay	Myanmar	F
Nikita	Parajuli	MSc Physics student	Patan Multiple Campus	Kathmandu	Nepal	F
Suruchi	Shahi	BSc student	St. Xavier's College, Maitighar	Kathmandu	Nepal	F
Hira	Fatima	MSc graduate / Visiting faculty	University of Karachi	Karachi	Pakistan	F
Frank Kelvin	Martinez	MSc student / Obs. Staff	Rizal Technological Univ.	PASAY CITY	Philippines	M
Princess	Tucio	MSc student / Instructor	Rizal Technological University	Rizal	Philippines	F
Narenrit	Thananusak	Student / Research assistant	National Astronomical Research Institute of Thailand (NARIT)	Chiang Mai	Thailand	M
Sappankum	Pranita	MSc student	Chiang Mai Univ.	Chiang Mai	Thailand	F

Bich Ngoc	Nguyen	PhD candidate	Vietnam National Space Center	Buon Ma Thuot	Vietnam	F
Azizbek	Matekov	MSc graduate / Researcher	Ulugh Beg Astronomical institute (UBAI)	Tashkent	Uzbekistan	M
Chao	Geng	PhD student	Purple Mountain Observatory	Nanjing	China	M
Fangfei	Shi	PhD student	Peking University	Beijing	China	F
Ruyue	Wang	MSc student	Xiangtan University	Xiangtan	China	F
Xiaowei	Duan	PhD student	Peking University	Beijing	China	F
Xiuming	Xu	PhD student	Xi'an Jiaotong-Liverpool University	Suzhou	China	M
Yan	Duan	PhD student	National Astronomical Observatories of China	Beijing	China	F
Lixia	Zhang	PhD student	Guangzhou University	Guangzhou	China	F
Junyu	Gong	MSc Student	Guangzhou University	Guangzhou	China	M
Qiqi	Xia	PhD Student	Shandong University	Weihai	China	F
Yani	Guo	MSc Student	Shandong University	Weihai	China	F
Yunlang	Guo	MSc Student	Yunnan Observatories	Kunming	China	M
Chuqi	Wu	PhD student	Yunnan Observatories	Kunming	China	M
Hushan	Xu	PhD student	Yunnan Observatories	Kunming	China	M
Lei	Zang	MSc student	Yunnan Observatories	Kunming	China	F
Linfeng	Chang	MSc Student	Yunnan Observatories	Kunming	China	F
Qishan	Wang	PhD student	Yunnan Observatories	Kunming	China	M
Wei	Liu	MSc student	Guizhou Normal Univesity/Yunnan Observatories	Kunming	China	M
Xiaohui	Fang	PhD student	Yunnan Observatories	Kunming	China	F
Xudong	Zhang	PhD student	Yunnan Observatories	Kunming	China	M
Xuzhi	Li	PhD student	Yunnan Observatories	Kunming	China	M

Zhijia	Wang	PhD student	Yunnan Observatories	Kunming	China	M
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Appendix B: Schedule

Key:

AC	Aeree Chung
ARC	Arnab Rai Choudhuri
CWP	Chen Wen-Ping
DJ	David Jewitt
DMk	David Mkrtychian
DM	David Mota
EvD	Ewine van Dishoeck
FX	Fan Xiaohui
IA	Itziar Aretxaga
JL	Ji Li
LL	Liu Liang
QS	Qian Shengbang
NY	Naoki Yoshida
YW	Yogesh Wadadekar
ZJ	Zhang Jia
ZL	Zhu Liying

		1 st Week at YNOs						
		(at hotel)	15 October	16 October	17 October	18 October	19 October	20 October
		14 October						
6:30-8:30			Breakfast	Breakfast	Breakfast			
8:30-9:00		Breakfast	Breakfast	Transport to YNOs	Transport to YNOs	Transport to YNOs		
9:00-10:30		School Opening	FX: AGN 2	FX: AGN 3	EVD: ISM+SF3	NY: Stellar Evol 3		
10:30-11:00			Tea/Coffee Break					
11:00 – 12:30		IA: Galaxies 1	DJ: Solar System1	DJ: Solar System2	NY: Stellar Evol 1	EVD: ISM+SF4		
12:30-14:00			Lunch					
14:00-15:30		FX: AGN 1	EVD: ISM+SF1	EVD: ISM+SF2	NY: Stellar Evol 2	EVD: ISM+SF5		
15:30-16:00			Tea/Coffee Break				Cultural	Activities
16:00-17:30		QS: Phatom 1	ARC: Solar Physics 1	ARC: Solar Physics 2	ARC: Solar Physics 3	FX: AGN 4		
17:30-19:00		ZL: Observations 1	LL: Observations 2	IA+: CD 1	DJ: Solar System3	ZI: Observations 3		
19:00-19:30		Dinner	Dinner	Transport to Dinner	Dinner	Dinner		
19:30-20:00		Dinner	Dinner	Banquet Dinner	Dinner	Dinner		
20:00 – 23:00					OBSERVATIONS	and RETURN to HOTEL		

2nd Week at YNOs							
	21 October	22 October	23 October	24 October	25 October	26 October	27 October
6:30-8:30			Breakfast				
8:30-9:00			Transport to YNOs				
9:00-10:30	DM: Cosmo 1	DJ: Solar System5	DM: Cosmo 2	DMk: PS 2	IA: Galaxies 2		
10:30-11:00			Tea/Coffee Break				
11:00 – 12:30	DJ: Solar System4	DMk: PS 1	IA/DM: CD 2	ZL: EB 1	YW: VO 3		
12:30-14:00			Lunch				
14:00-15:30	JL: XR1	JL: XR2	YW: VO 2	Student Present 1	AC: Radioastro5		
15:30-16:00			Tea/Coffee Break				
16:00-17:30	AC: Radioastro1	AC: Radioastro2	AC: Radioastro3	AC: Radioastro4	AC: Radioastro6		
17:30-19:00	ZJ: Observations 4	YW: VO 1	ZJ: Observations 5	IA/DM: CD 3			
19:00-19:30			Transport to Hotel		Transport to Lijiang		
19:00-20:30			Dinner				
20:30 – 22:00			HOME WORK				
						Cultural and Astronomy in Lijiang	Activities

		3rd Week at YNOs			(at hotel)	
		28 October	29 October	30 October	31 October	1 November
6:30-8:30				Breakfast		
8:30-9:00				Transport to YNOs		Breakfast
9:00-10:30	DM: Cosmo 3	ZJ: EB 2	CWP: Stellar Clusters2	CWP: Stellar Clusters3		Student Present 2
10:30-11:00			Tea/Coffee Break			
11:00 – 12:30	CWP: Stellar Clusters1	IA: Galaxies 3	DM: Cosmo 4	DMk: Spec 2		Student Present 3
12:30-14:00			Lunch			
14:00-15:30	QS: CV 1	QS: CV 2	IA: Galaxies 4	JL: XR4		JL: XR6
15:30-16:00			Tea/Coffee Break			
16:00-17:30	DMk: Spec 1	YW: VO 5	JL: XR3	JL: XR5		IA/DM: CD 5
17:30-19:00	YW: VO 4	IA/DM: CD 4	QS: Photom 2	YW: VO 6		School closing
19:00-19:30			Transport to Hotel			Closing Dinner
19:00-20:00			Dinner			
20:00 – 22:00			HOME WORK			

Appendix C: List of Students' Presentations

GROUP PROJECTS

Searching Contact binaries below the period limit:

- J232610.13 -294146.6 13.58-13.92 P=19882.087s (Group 1)
- J000205.32+381321.5 15.16-15.33 P=18064.547s (Group 2)
- J011732.10+525204.9 13.98-14.09 P=19350.996s (Group 3)
- J044132.96+440613.7 14.38-14.59 P=19712.589s (Group 4)

Near contact binaries:

- BW3 V38(18:04:44.19, -30:09:05) P = 0.19839d (Group 5)
- BO Peg (213117.87 +115646.5) P=0.5804301d (Group 6)
- HH95-79 (05:48:03.85 +28:30:47.6) P=0.2508d (Group 7)
- NSVS 6550671 (02:20:50.9, +33:20:46.6). P=0.192637d (Group 8)

Pulsating stars:

- J214046.44+130716.6 12.50-12.53 P = 0.2259644 d (Group 9)
- CSS_J034112.5+035336 P = 0.285554d (Group 10)

The groups carried out these projects performing observations on the following YNOs telescopes: the 1m (assisted by Dr. Zhang Jia): groups 1,5,6; 60cm (assisted by Dr. Liu Liang): groups 2,7,9; and 70cm (assisted by Dr. Liu Nianping): groups 3,4,8,10

INDIVIDUAL PRESENTATIONS (1.5min flash talks)

Name	Surname	Talk
Xiaowei	Duan	The “apparitions” in RR Lyrae stars
Muhammad Daim	Norharizan	Lunar Occultation of Binary Stars
Lei	Zang	Recurrent novae
Linfeng	Chang	Reverse Algol
Eaindra Moh Moh	Lwin	CMBR anisotropy
Ruyue	Wang	Magnetohydrodynamical turbulence
Xiuming	Xu	SMBH Triple dynamics
Javzandolgor	Bad	Education of Astronomy in Mongolia
Yan	Duan	A Study of the Coexistence of Outflow and Bubble
Azizbek	Matekov	Unique effects in the nature of eclipsing binary stars
Qishan	Wang	Asynchronous Polars
Bich Ngoc	Nguyen	Spectral properties of the Northern Polar surface of Mercury
Fangfei	Shi	roAp (rapidly oscillating A-type chemically peculiar) star
Wei Shen	Tan	The dark matter analysis of the spiral galaxy NGC4321
Chuqi	Wu	Observation and research of massive binaries in the SMC
Nikita	Parajuli	Tabby’s star
Narenrit	Thananusak	Luminosity function of $z \sim 7$ Lyman-break galaxy candidates
Hushan	Xu	The Legend of Vega and Altair
Lixia	Zhang	The relationship between jet and accretion disks in AGN
Chao	Geng	Abell407: a forming BCG?
Yunlang	Guo	Classical novae
Pranita	Sappankum	Circumbinary Planet study
Sima	Taefi Aghdam	Analysis of physical parameters of the globular cluster M13
Wei	Liu	Dwarf novae
	Ni Putu Audita Placida Emas	Constraints of the total mass of neutrinos from cosmological observations
Princess	Tucio	Evolution of supersoft X-ray sources IN LMC
Xudong	Zhang	Special properties of contact binaries
Xiaohui	Fang	Behaviour of novae-like objects
Junyu	Gong	Decomposition of galaxies: M81
Bhavana	Lalchand	A submillimeter flare
Frank Kelvin	Martinez	Planetary Orbital Dynamics During Sun’s Death
Hira	Fatima	The 90 yr journey of the Hubble constant
Xuzhi	Li	Contact binaries in open clusters
Singgih Prana	Putra	Spectroscopic evolution of Beta Lyra
Qiqi	Xia	Photometric solutions of WUMa-type star NR Cam
Ahmed	Estiak	Quantum analogy to the classical gravitomagnetic clock effect

Yani	Guo	A brief data processing of EW binary stars
Suruchi	Shahi	Timing analysis of X-ray data from 2003 outbursts of X-ray transient H 1743-322
Zhijia	Wang	Eclipse timing variation of Algol systems

Appendix D: Students Feedback by Numbers

This is a direct transcription of the feedback forms filled by the students: 37/39 students filled the form. Some questions were left blank by some students. Some of the students identified themselves. Disclosing their identity in the feedback form was optional.

Any significant correction or addition to their texts is indicated by []

Applications:

		5	4	3	2	1	
The website told me all I needed to know to prepare for the school	Strongly agree	29	5	3			Disagree
The application form was easy to fill in	Strongly agree	19	7	8	2	1	Disagree
I understood well the questions in the application form	Strongly agree	26	10	1			Disagree
Applications were efficiently handled and I received a prompt reply	Strongly agree	29	7	1			Disagree

Comments

1.20 I think that the application form is quite long with [too] many questions.

1.21 Some questions in the application form are similar (4.1 motivation in question 4 & 7). The website of the 42nd ISYA is very slow to load from other countries. (I.P. addresses).

1.22 Too many questions in application form.

1.37 I like the word limitation part, which makes us think until it is short and only useful information.

Lectures:

		5	4	3	2	1	
The “blackboard” lectures were a very useful part of the ISYA training	Strongly agree	29	5	1	*1	1	Disagree
The hands-on laboratories were a very useful part of the ISYA training	Strongly agree	22	11	4			Disagree
The time spent on the lectures/labs was right	Strongly agree	16	11	7	2		Disagree
I could follow most of the lectures/labs well	Strongly agree	8	12	12	4		Disagree
The lectures/labs were well presented	Strongly agree	23	11	3			Disagree
The lecturers responded well to my questions	Strongly agree	27	9	1			Disagree
I have identified in this school material I need to study further	Strongly agree	22	13	2			Disagree
I found it easy to get on with the lecturers	Strongly agree	21	8	7	1		Disagree
The lecture room was comfortable	Strongly agree	24	10	2	1		Disagree
I think there was a good balance of hands-on and seminal lectures	Strongly agree	23	9	5			Disagree
I found the Career Development, Job hunting, CV/paper writing, Ethics workshops useful	Strongly agree	30	6	1			Disagree

Comments:

2.2 Introduce some simulation topic?

2.3 The schedule was too tight. Sometimes it was difficult to understand the last lectures.

2.9 I think lecturers should get the slides before start and should have website to [connect?] the slides because [it] is easy [for the] student to go for slide. For example, some students have WeChat. It is very hard to download and update information.

2.11 I think the schedule was very tight. It was very difficult to absorb everything. Very little time to review things in the hotel room. Sometimes there was some noise outside the YNOs classroom. It was disturbing.

2.20 The internet connection is the most important to astronomical school. And I think it is very slow and hard to communicate because blocking of FB, IG, Twitter, wiki, gmail and Google [crying face attached]. I think the school should provide lecturers' slides before their timetable because we can quickly review the content and easier to follow when the lecturers talking. The school should provide the [debugged] programs because we used a lot of time to fix bugs in IRAF, more than working on the real data. I loved the "blackboard" lectures so so much, I want to understand everything. But the 5:30-7:00PM my brain cannot receive very new material. [Crying face attached]

2.22 *This student expressed great satisfaction with the lectures otherwise, and we suspect the student refers to a set of lectures that were delivered on the whiteboard rather than on slides, and not to all seminal lectures.

2.23 The schedule is too tense! I cannot focus on the lectures on the last week. One lecture lasts for 1.5 hrs without a break. I cannot focus for so long. Also, sitting for whole day makes me a little stomach ache. Please proved a .tar file of all the slides, if possible.

2.25 The lessons are arranged from morning to night. I think it is a challenge for us. I hope in the future, maybe we can arrange 4 lessons a day, not 5.

2.29 There are too [many] lectures everyday

2.36 I think there is too little time for hands-on

2.37 Personally I like the part: (a) Ewine [came to me concerned] after the class because maybe she found I [did] not understand; (b) "food for thought" part from David Jewitt; (c) Japan PhD scholarship from Yoshida; (d) China scholarship part from Liying; (e) "Impostor syndrome" part from Itziar; (f) "Final thought" part from Xiaohui; (g) "A last word to share" from Aeree; which give us some extra thoughts besides astronomy lectures.

Observations and Project training:

		5	4	3	2	1	
The group project was challenging but I learned about the topic and about working in a group environment	Strongly agree	30	5	2			Disagree
The time spent on projects was right	Strongly agree	19	11	3	4		Disagree
The lectures prepared me adequately for the project	Strongly agree	21	13	2	1		Disagree
The computing arrangement was good to make progress	Strongly agree	24	9	4			Disagree
The tutoring I got for my project was adequate	Strongly agree	22	10	4	1		Disagree
I found the project supervisors helpful and easy to get on with	Strongly agree	28	5	4			Disagree
The observing nights were good training for me	Strongly agree	15	12	7	2	1	Disagree
It would have liked to have more observing training	Strongly agree	28	5	3	1		Disagree

Comments:

3.3 The weather was cloudy on the 17&18th October. We went to the observatory but could not observe. I think observations could be arranged again in the second week at Yunnan Observatories. It is indeed [bad] luck that due to the weather we could not observe in Lijiang [either].

3.8 Maybe the weather is a little bad.

3.23 Few observing nights.

3.9 Observations, I think, lecturers should get the data and slide before start presentation. It make more understanding. For program data analysis, lecturer should find easy way to download and install.

- 3.20 I think that the data of observations could [be] given in the first day of the school. Students could practice sooner.
- 3.21 We want more time to prepare the observation and presentation. I want to have more time at Lijiang observatory.
- 3.22 Time to observe was too short. My group only had 30 minutes to observe. Too short compared to other groups. [Note: actually only 4/10 groups managed to observe due to poor weather conditions.
- 3.37 Thank you for the training, this is the first optical observation and I feel so [much] pleasure.

Presentation exercises

		5	4	3	2	1	
The individual flash talk presentations were a good exercise	Strongly agree	32	3	1	1		Disagree
The group presentations were a good exercise	Strongly agree	31	5	1			Disagree
The time spent on this activity was right	Strongly agree	24	8	4	1		Disagree
This exercise was well organized	Strongly agree	25	8	2	1		Disagree
I learned some tips on how to make my presentations more effective	Strongly agree	30	7				Disagree

Comments:

- 4.18 I hope I can have more time to prepare the presentations.
- 4.23 Time limit for flash-talks is too short. Please give some advice in advance [Note: a half-an-hour session was devoted to advice on how to prepare flash talks. The student might have missed it].
- 4.36 I like flask talks. The flash talk presentation is a good exercise.
- 4.27 The flash talk is a very new and fresh challenge for me. I enjoyed it very much!

Accommodation:

		5	4	3	2	1	
Transportation from my home town to the school was efficiently done	Strongly agree	34	2				Disagree
Transportation from the hotel to the observatory was efficiently done	Strongly agree	32	5				Disagree
The rooms were good	Strongly agree	32	4	1			Disagree
Breakfasts were good	Strongly agree	30	4	1	2		Disagree
Take-away lunches were good	Strongly agree	21	7	7	1	1	Disagree
Hotel lunch/dinners were good	Strongly agree	25	7	4	1		Disagree
The organizational support was good	Strongly agree	33	4				Disagree
Generally, the living infrastructure for ISYA was good	Strongly agree	33	3	1			Disagree
YNOs/Kunming was a good place to hold this ISYA	Strongly agree	31	3	2		1	Disagree

Comments:

- 5.4 Except for the limited internet access, YNOs/Kunming is perfect!
- 5.7 In my opinion YNOs and Kunming is the best place for this school. Thank you local organizers from YNOs. You considered everything for us. Thank you.
- 5.9 It is difficult to find the store (small). Sometimes, I want to buy something.
- 5.20 However, I think the takeaway lunches were too much for me.
- 5.21 I don't like the take-away lunch. It generated many plastic and food wastes. Astronomers have to [have a] concert [for] the environment. Chinese food contains numerous oils, it makes many gases in my stomach and my digestion stops [Crying face]. I love China but the place that cannot use many social network and slow internet connection made us to transfer the file and communication for foreigners.

- 5.22 I will miss YNOs! Good place to study! [Note: a foreign student].
- 5.23 Thanks LOC for preparing both spicy and non-spicy food, and for everything that you did.
- 5.37 Thank you for the arrangement, especially to Yunnan Observatory students, [who] accompanied us for every help we need.

Cultural tours and Leisure time:

		5	4	3	2	1	
There was enough leisure time in this school	Strongly agree	11	6	10	4	6	Disagree
Having a free morning on Saturday 19th was good	Strongly agree	31	4	1			Disagree
The Saturday 19th Golden Temple tour was good	Strongly agree	27	7	3			Disagree
The Sunday 20th excursion to the Nationalities Village was good	Strongly agree	31	4	2			Disagree
The weekend excursion and free time in Lijiang was good	Strongly agree	31	3	2	1		Disagree
Generally, this part of the ISYA was good	Strongly agree	32	5				Disagree

Comments:

- 6.3 It would be great if there would be some leisure time every evening.
- 6.7 I just want to [say] all of they are fantastic. I really liked it.
- 6.8 On weekend I need more time to take a rest and exercise.
- 6.11 Cultural tours were very good
- 6.18 The school time is too long to review what we have learned
- 6.21 I want more time relaxing. It is very good because it is the time that we can communicate with new friends. I prefer natural places, and Kunming has various places, more than artificial places. I love Lijiang so so much [that] I want to come back. I want more time in Lijiang ☺.
- 6.22 I need more “me” time. It is important for introverts.
- 6.23 [Little] leisure time on weekends.
- 6.37 Thank you for the planning. Lijiang is very beautiful.

The future

		5	4	3	2	1	
I developed an international network as a result of this ISYA	Strongly agree	28	6	3			Disagree
The ISYA helped me to better identify and understand my research interests	Strongly agree	26	9	2			Disagree
The ISYA encouraged me to strengthen my research in astronomy	Strongly agree	30	5	2			Disagree
Through the ISYA I acquired a broader view on the research done in astronomy	Strongly agree	34	3				Disagree
I have benefited significantly from attending this ISYA	Strongly agree	34	2	1			Disagree
I would recommend fellow students to apply to the next ISYA in the region	Strongly agree	34	2			1*	Disagree

Comments:

- 7.3 It would be great if we can get the recordings of all lectures
- 7.8 I really like this school very much. I listen to many lecturers. I have a motivation.
- 7.11 I am interested now in theoretical astrophysics.
- 7.17 I think this program is very nice and very effective
- 7.21 I love the gender equality. It is chiefly important to society.
- 7.32 (*) [This student marked all other questions in 7 as 5, and in general all questions in other sections in the 5-3 range, except for 6.1, regarding the amount of free time, that was marked as 1]

If you have any other comments, please put them here:

- 8.4 Thank you for the wonderful experience. Thank you for your hard work ☺
- 8.7 I am really happy I could participate in this very nice and very helpful school. Everything and everyone [belonging] to this school gave me a lot of motivations and encouragements. I believe that we will collaborate in the future in astronomy. Thank you IAU, all excellent lecturers, Itziar, David Mota, also YNOs group. This school left me truly nice memories. I am wishing to all of you successful work, healthy body, peaceful mind and soul.
- 8.8 Thank you all the lecturers. I love many of you. You helped me to understand many things and encourage me to strengthen my research, and give more chances for us to do the presentations, and we acquired big progress during this time. At last, I want to thank the LOC, thank you very much. ☺
- 8.10 This training workshop is one of the best training I attended ☺
- 8.11 I think it would be better if you keep the last day free for the future students. Because the schedule is tight and students always search for time to go outside together for a walk, eating something or shopping. It drains their energy and time. Thus affects the next day's lecture. If students know for sure that they have a last day for enjoying and get together, thus tendency may reduce.
- 8.19 Add some activities with students and group members, it should be better!
- 8.21 Thank you LOC, you took care of us very well. Thank you for everything. Thank you [to] every lecturer. I got [much] motivation in my astronomy career. I truly appreciate [heart].
- 8.25 Thanks a lot! ☺
- 8.37 Thank you for all the lecturing teaching time and effort.

Appendix E: Lecturers' Feedback by Numbers

This is a direct transcription of the feedback forms filled by the lecturers. Any modification or notes by directors are marked by []

12/13 lecturers (we excluded school directors) filled the form.

ORGANIZATION BEFORE THE SCHOOL

		5	4	3	2	1	
The website/emails told me all I needed to know on how to prepare my lecture course	Strongly agree	4	3	3	1		Disagree
The website/emails told me all I needed to know to go and come back from the school	Strongly agree	10			1		Disagree
Communication with ISYA program directors was efficient and they replied to my queries timely	Strongly agree	12					Disagree
The planning of my trip to/from the school was easily done through the IAU Office	Strongly agree	5	1	1	1	1	Disagree

Comments:

- Labs and hands-on activities can be very limited by time and resources (computers and software). In addition (and more seriously), it is hard to imagine the level of students before actually interacting with them. Describing how to prepare the lab in the website/emails seems to be almost impossible as all of these may vary every time. Instead, a short survey designed by a lecturer for students might be helpful for the preparation. For instance, the lecture can ask students specifically about the experience with the data (in any wavelength). The organizers may ask the lecturer if he/she is interested in this opportunity, and if so, the lecturer can prepare a short list of questionnaires in advance, and as soon as the student selection is done, the organizers can toss the list to the students. Even if the response rate is not 100% and the statistics comes out in the last minute (like a week before the first lecture), it might be still helpful for the lecturer to prepare the lab and hence for the best experience of the students.
- The meeting website was not properly updated: several of the links were unfilled when I last checked a day before getting on the airplane [note: lecturer marking A.2 as 2]. The IAU office asked me to book the ticket myself, which I did, to save money [note: lecturer marking A.4 as 1] .
- I received travel support from the Chinese Academy of Sciences. The reimbursement was done smoothly and efficiently [note: lecturer not marking A.4].
- Local lecturers could manage their trip by themselves, which can be handled through local organizers.
- Because of the diversity of the students (their education level, interest, experience etc) , it is not easy to prepare lecture materials appropriately. But this is not an organizational problem. My mark in the above just reflects this fact/difficulty [note: lecturer marking A.1 as 3].
- The only problem that I encountered was Itziar's email to my University email address kept on getting bounced, so she had to send again to my gmail account. I don't know if this happens to other people as well. Otherwise, I thought the communication and organization before the school were excellent.

- The air tickets quoted by the IAU agent in Paris were nearly twice as expensive as what I was seeing on Indian travel websites. After several email exchanges with Rosaria, we both agreed that I should buy the tickets and get them reimbursed. It would have saved all of us time if this ticketing process were simpler.

A) LECTURES/STUDENTS AT THE SCHOOL

		5	4	3	2	1	
The school infrastructure was appropriate for me to lecture efficiently	Strongly agree	7	2	1		1	Disagree
The lecturing time I requested was awarded by the school	Strongly agree	11	1				Disagree
I found the students could follow my lectures at a reasonable pace	Strongly agree	4	4	2		1	Disagree
The background of the students was too diverse for the lectures to reach them all at some level	Strongly agree	5	4	1	2		Disagree
On hindsight, I would have needed more time / another arrangement to lecture my topic efficiently	Strongly agree	6	1	3	1	1	Disagree
I believe my lecture course helped the students in advancing their graduate studies and will make them stronger candidates for any other graduate school they apply to.	Strongly agree	7	3	2			Disagree
I believe my course was well related to the rest of the courses at the school.	Strongly agree	10		2			Disagree
Generally, the ISYA environment was good and productive.	Strongly agree	9	2	1			Disagree
I am willing to maintain contact and mentor some of the students I met at the school	Strongly agree	9		3			Disagree
I believe my time and effort was worth it, and I promoted the education of the students attending.	Strongly agree	8	1	2			Disagree

Comments:

- The students who talked to me were all extremely nice people. They had a very wide range of background preparation from “not good” to “very strong” (but only in narrow areas). Many had obviously no knowledge of [XXX]. In this sense, everything I talked about was new to them, so I guess that’s horizon-expanding, which is what you want. I could have talked much more but maybe 5 lectures is about right, to maintain breadth of field in a 3 week [school].
- The School has been well organized. I enjoyed my participation. Thank you for the opportunity. I was very touched to see students from different countries and cultures to work and live together nicely. By all means get me involved should such opportunities arise in the future. While it is good to keep the students busy, perhaps we fill their schedule with discussions, projects, and exercises, instead of many lectures. I would have still reduced the load of my lectures.
- If I can know better of our students (not only their degree, but also their research experience, interests etc.; sometimes a paragraph should be OK), I can have more sense how to prepare for my lab. courses more efficiently. I assume they are all beginners. I did change a little bit of my lab. courses when I have one/two classes.
- Under ideal circumstances, the lecture contents and materials could be made optimal by consulting other lecturers/organizers and by knowing the students’ background. I attempted to do so, to some

extent, but in practice, the diversity of the students experience level and their background make make it virtually impossible to tailor the materials to all the students. It might be an idea to make full use of the lecture hour (90min this time) so that a part of it is for very basic materials (for everyone) but the last ~20min or so is advanced materials for grad students/postdocs etc.

- For normal lectures, the environment was sufficiently good whereas it was not necessarily for labs. Grouping of students was optimized for their interaction of mostly outside the lecture room, not necessarily for the lab activity. I wonder if some rearrangement could have been done for labs based on the resources and the experience of students. Also, for the lab instructors, bringing a TA to the school who can run around together with the lecturer, helping students during the activity may be extremely helpful. The number of students is a bit high for one person to cover the hands-on activity. In addition, it was helpful to have some overlaps in the contents across different lectures, but sharing the materials among lecturers in advance could have been even more helpful to use the overlapping content effectively. This experience was totally worth to me, but I am not sure if it was also worth to the students. [Note: the groups were design to balance academic levels, gender and geographical precedence. This was valuable for most hands-on labs].
- While the background of the students is diverse, I do believe that all students are able to get something useful out of my (and others') lectures, as long as we are able to connect to both current research topics and the basic physics picture. I love the students (and of course they reminded me myself almost three decades ago), and I am impressed by the level of questions and interactions both during and after classes.
- I was expecting to have a computer lab ready with the software I had specified installed. Unfortunately, there were no arrangements for such computers. This would not have been much of a problem since most of the students were carrying laptops. Unfortunately, there was a problem that I had not anticipated. Several astronomy websites serving data from the virtual observatory (the topic of my course) were extremely slow. I suspect that this was due to packet sniffing and filtering by the Chinese firewall. This required significant last minute alteration to my course contents. I am not sure how far this was successful.

C) INFRASTRUCTURE

		5	4	3	2	1	
The transportation from airport to school was efficiently done	Strongly agree	12					Disagree
The hotel rooms were good	Strongly agree	11					Disagree
The meals were good	Strongly agree	9	2				Disagree
The local organizational support was good	Strongly agree	10					Disagree
YNOs was a good location to carry out the ISYA	Strongly agree	10		1			Disagree
The selected city was a good location for the school	Strongly agree	11					Disagree

Comments:

- Hard to see how you could find a better ISYA host than this one. Awesome! 2 Gold Stars for Team Shengbang.
- Yunnan is a good place to host the School with authentic cultural touch. Students perhaps got more impressions of Lijiang than Kunming, simply because they had some spare time to explore the city, but did not have such a chance in Kunming. I am glad to see that the students and lectures are well geographically and gender balanced.

- I enjoyed a lot during my stay. Thanks a lot for the local organizers, who were so nice and considerate. Yunnan is a very beautiful place with different peoples.
- I thank here again the organizers and LOCs for their hospitality. I was almost spoiled as a lecturer at ISYA.
- The best LOC I have ever seen! I felt the LOC truly cared about each one of us. Their service didn't seem superficial or pretentious. I could feel their care from the bottom of my heart. I really appreciated! If I may comment though, a big wall clock in the lecture room and some working space in the hotel might have been good. Also, I did not enjoy the noise from the construction [at YNOs. Note: lecturer marked C.5 as 3]. I wonder if there was any way to coordinate with the people in the other divisions.
- The hosts went above and beyond in their efforts. Everything went smoothly. I only wish that we could trouble them less (e.g., I am happy to take the bus with the students to the school, or take the airport bus to airport), but I really appreciate what they did.
- The quality of the host infrastructure in all aspects other than the computer network speeds mentioned in the previous comment were absolutely world class. The LOC went out of their way to make sure that the lecturers were well taken care of. Their attention to detail and punctuality in all activities will be something others will find difficult to emulate. I was a bit apprehensive about food since I am a vegetarian. I was delighted to find that there was a wide and tasty choice of options even for me. The LOC made special arrangements during lunch and breakfast and dinner at the hotel were great too.

General Comments:

- It would be nice if the local internet were faster or more local computer facilities can be offered.
- I like the breadth of the lecture contents and actually wish our junior students would be able to attend to. Other schools in astronomy are more oriented to specific topics (such as GW), but those like ISYA would be also effective to undergrad students from Europe, US, Japan etc. Overall I found the ISYA activity is an excellent one!
- The course is very tight which is good for students learning more. However, the students spend most of their time in the classroom. I suggest maybe next time thinking about leave some time for sports, for example, in China, we can organize students to play table tennis.
- Probably would be good to have a few Q&A Only sessions - maybe one per lecturer, so that free-form, longer questions could arise and be addressed. The average level of the lectures in Week 1 was too high. The second week is starting better, but I have to leave before the end of the week. The students are most excited about using a telescope. I saw 2 of them jumping up and down with child-like excitement at the prospect of seeing a telescope. I should have provided reading material with each lecture but didn't. Maybe this was suggested in the notes, but I didn't notice. I can do it retroactively when I get home, but that's a bit late. This was my main failing. Perhaps lecturers could be "required" to provide pre-reading material? [Note: the lecturers sent reading material to the directors, and these distributed the references to the students].
- This school is a great opportunity for students, I could tell. I admire all the effort made by the organizers. I hope this spirit lasts for long! Lastly, some names came to my mind during the school, i.e. people who would be very well suited to this kind of environment [names omitted].
- I suggested an increase in the budget to increase the number of foreign students, especially the students from underdeveloped countries. Because some students really want to study, it is sad to let down their desires to study.
- I thank the organizers for inviting me to lecture at ISYA 42. It was overall a very interesting experience, although I have negative feelings about a few things. So, after considerable hesitation, I decided to write down my frank opinion in detail.

Let me first begin with the positive things. Since I am an astrophysicist who decided to return from the US to [XXX] at a time when [XXX] still did not have a strong base in astrophysics and I had worked to build up an astrophysics community in [XXX], I really appreciate that IAU is organizing such Schools to help students in the parts of the world which still lack strong traditions in astrophysics research. The IAU President herself delivering several lectures at this School certainly conveyed a strong message that IAU considers the ISYA Schools very important. It was certainly a privilege for me to meet the several distinguished astrophysicists who came from around the world to lecture at this School. Itziar Aretxaga as Director of ISYA managed the School extremely well. The local organizers did their works almost flawlessly. I know that Chinese people are very hospitable. However, even by Chinese standards, the kind of hospitality we received from the local hosts – Qian Shengbang and Liying Zhu – was overwhelming. I do not know how to express my feelings about this wonderful hospitality! The only complain I have about local organizations is that the board in the lecture room was inadequate and, in addition, the lower half of the board was not at all visible from the last row of the lecture room. But then this is something which nowadays happens in many such Schools. I probably belong to that vanishing tribe of old-fashioned professors who like to develop basic concepts on a board!

I spent quite a lot of time talking to the students. They are a charming and likable bunch of kids. It was a unique experience to meet students from such countries as Mongolia, Uzbekistan, Thailand, Philippines, Malaysia, Indonesia, Bangladesh, Pakistan, Nepal, Iran. Although some of these countries are my neighbouring countries, I rarely have opportunities of meeting citizens of these countries. I understand that there were very large number of applications from India, but students from countries like India, Japan and South Korea were not selected on the ground that these countries already have good graduate programmes in astrophysics and IAU should spend its limited resources helping students from more isolated countries. [Note from ISYA directors: this perception is incorrect, two Indian students were invited to the school, and there were no applications from South Korea nor from Japan, see pages 3-4]. It was a pleasure talking with the students about their countries and cultures, and I really enjoyed that. Most of the students are very interesting and warm-hearted human beings. But, as soon as they tried to discuss science with me, I was almost horrified by their weak academic standards. Several of them told me that, after listening to my lectures, they are interested in taking up research careers in [XXX] and asked me about possible opportunities. But I found that they followed only the phenomenological and descriptive parts of my lectures. I devoted about 75% of a lecture explaining the basic concepts of [XXX] as simply as I could. All the students seemed to lack the elementary knowledge of basic physics and mathematics necessary to understand such things. I don't think that they understood conceptual parts of the lectures by other lecturers as well. [Note by directors: the full report including other comments about students' level and selection process are sent to the OYA Steering Committee for analysis, without reproducing them in this report].

- I am sorry that I couldn't stay longer during to other engagements. I was not there during the week with classes on data reduction and computing tools. But I do think to have more material related to machine learning, big data and astrostatistics, probably beyond the hand-on demonstrate of how to use the tools, and reach a deeper level of basic principles of data mining and machine learning, will benefit the students
- I had a really great time at the ISYA. The LOC was very good and the students were enthusiastic learners. Many came from countries where the astronomy infrastructure is very poor and I am reasonably sure that these students benefited a lot from this school, fulfilling one of the goals of the ISYA. The SOC gave us sufficient time and flexibility in planning our lecturers. The lecturers chosen provided an almost all encompassing view of modern astronomy research. I enjoyed listening to several talks myself and learnt about new ideas and techniques. A bit of a concern is whether the students got enough time to assimilate the many new ideas that they were

exposed to.

- 1) The infrastructure of observatory and existing telescope facilities well fit the needs of ISYA school.
- 2) However, the quality and the speed of the Internet was relatively low, in the institute and especially in the hotel, due to the policy of blocking of some internet sites (what is a common problem for China) I cannot give to students some working links for downloading of useful software.
- 3) The local organizing committee team and ISYA Directors worked hard to create a good atmosphere for productive interaction of students and lecturers.
- 4) I impressed with activity of students asking many questions.

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