IVOA Small Projects Meeting 2003

26-28 November 2003: Beijing, China

Prepared by Chenzhou Cui, Xiaoqian Wang, Gaochao Liu, Dec. 15, 2003

Meeting Site:

Beijing Conference Center (No. 6 building, No. 5 meeting room)

Attendees:

Name	Institute
Prof Ajit Kembhavi	India-VO, IUCAA, India
Dr Ali Luo	China-VO, National Astronomical Observatory, China
Prof Andy Lawrence	AstroGrid, University of Edinburgh, Scotland, UK
Prof Baoping Yan	Computer Network Information Center, CAS, China
Mr Bong Gyu Kim	KVO, Korea Astronomy Observatory, South Korea
Ms Catherine Qin	AstroGrid, University of Leicester, UK
Dr Chenzhou Cui	China-VO, National Astronomical Observatory, China
Ms Cuilan Qiao	China Central Normal University, China
Dr Dong CHEN	China-VO, Yunnan Observatory, NAOC, China
Mr Gang QIN	Computer Network Information Center, CAS, China
Ms Ganghua Lin	China-VO, National Astronomical Observatory of China, China
Ms Gaochao Liu	China-VO, National Astronomical Observatory, China
Prof Hongjun Su	National Astronomical Observatory, China
Mr Jian Gao	Beijing Normal University, China
Mr Jian Sang	China-VO, National Astronomical Observatory, China
Dr Jianfeng Zhou	China-VO, Tsinghua Center for Astrophysics, China
Prof Jiansheng Chen	Peking University, China
Dr Jin ZHU	Beijing Planetarium, China
Dr Kai Nan	China-VO, Computer Network Information Center, CAS, China

Mr Keith Noddle	AstroGrid, University of Leicester, United Kingdom (UK)
Prof Licai Deng	National Astronomical Observatory of China, China
Ms Lingkun Li	Computer Network Information Center, CAS, China
Dr Masatoshi OHISHI	JVO, National Astronomical Observatory of Japan, Japan
Mr Mengjun Tsai	Graduate Institute of Astronomy,NCU, Taiwan
Dr Peter Quinn	AVO, European Southern Observatory, Germany
Mr Po-Chieh Yu	Graduate Institute of Astronomy,NCU, Taiwan
Dr Rui QI	Beijing Planetarium, China
Mr Sang Chul Kim	KVO, Korea Astronomy Observatory, South Korea
Dr Xiangrui Liu	Beijing Institute of Technology, China
Ms Xiaoqian Wang	China-VO, National Astronomical Observatory, China
Prof Xiaowei Liu	Peking University, China
Mr Yang YANG	China-VO, Center of Astrophysics, Tsinghua University, China
Prof Yanping Zhang	Beijing Normal University, China
Dr Yanxia Zhang	China-VO, National Astronomical Observatory, China
Prof Yaoquan Chu	Univ. of Sci. Tech. of China, China
Prof Yongheng Zhao	China-VO, National Astronomical Observatory, China
Dr Ze Luo	China-VO, Computer Network Information Center, CAS, China
Dr Zhihui Du	Department of CS, Tsinghua University, China
Prof Zhiliang YANG	Beijing Normal University, China

Program:

Nov. 26

8:30-9:00   Registration

Chair	**Prof. Xiaowei Liu**	
9:00-9:30	The International Virtual Observatory Alliance	Dr. Peter Quinn
9:30-10:00	China-VO: Yesterday, Today and Tomorrow	Prof. Yongheng Zhao

10:00-10:30   Photography and Coffee Time

Chair	**Ms. Catherine Qin**	
10:30-11:00	e-Science, Data Centres, and the Virtual Observatory	Prof. Andy Lawrence
11:00-11:30	Current status and future of Korean Astronomical Data	Mr. Bong Gyu Kim
11:30-12:00	Early-version of the KADC/KVO DB system	Mr. Sang Chul Kim

12:00-14:00	Lunch	

Chair	**Mr. Bong Gyu Kim**	
14:00-14:30	AstroGrid and the IVO Infrastructure	Mr. Keith Noddle
14:30-15:00	Potential R&D focuses for China-VO	Dr. Chenzhou Cui
15:00-15:30	CAS Informatization Program and e-Science	Prof. Baoping Yan

15:30-15:45	Coffee Time	

Chair	**Dr. Dong Chen**	
15:45-16:15	Virtual Observatory-India	Prof. Ajit Kembhavi
16:15-16:45	OGSA Based MetaService Architecture	Prof. Zhihui Du
16:45-17:15	Astrophysical Integrated Research Environment	Dr. Jianfeng Zhou
17:15-17:30	MySpace: Personalized Work Space in AstroGrid	Ms. Catherine Qin

17:30	Banquet	

Nov. 27

Chair	**Prof. Zhiliang Yang**	
9:00-9:25	Scientific Data Grid and China-VO	Dr. Kai Nan
9:25-9:50	Apply Work Flow Technologies to VO --- A Draft	Dr. Dong Chen
9:50-10:10	Virtual Teaching of Physics	Ms. Cuilan Qiao
10:10-10:30	China-VO Data Access Service Based On OGSA	Mr. Jian Sang

10:30-10:45	Coffee Time	

Chair	**Dr. Kai Nan**	
10:45-11:05	Data Mining in the Multidimensional Parameter Space	Dr. Yanxia Zhang
11:05-11:25	The Grid System Design	Dr. Xiangrui Liu
11:25-11:40	Spectral Analysis Pipeline for LAMOST Project	Dr. Ali Luo
11:40-12:00	China-VO Demo: Grid Based Galactic Abundance Gradient Research	Mr. Ze Luo

12:00-14:00	Lunch	

Chair	**Dr. Peter Quinn**	
14:00-17:00	Discussion (Topics)	
(14:00-14:30)	Current Status of JVO	Prof. Masatoshi Ohishi

Nov. 28

8:00-16:00	Travel: Badaling Great Wall and Ming Tomb

Discussion Topics:

- Advantages and disadvantages of small projects
- The role of small projects and regional efforts in the IVOA
- Strategically important development programs for small projects
- Collaboration among small projects and with big VO projects
- Concrete activities and steps that can be taken by the regional projects
- Implementation of IVOA standards and protocols for general use
- The formation of a regional network of data centers
- Indirectly VO-related astronomical initiatives in the region

Discussion highlights:

Peter:

I think the small project is very clear, the small project from the small astronomical community. We will be great by given their community access the virtual observatory. The virtual observatory is an important way for these communities to access the data from the large data centers in the world. Many organizations make their data available to anybody who can plug into the virtual observatory and let their community access to it. So there is a clearly major reason for the small community particularly becoming involved in international observatory. By being part of this virtual observatory alliance, the small projects can get from the alliance many important pieces of standards, tools and what they are going to need. In the IVOA, there are a lot of people working very hard, and the small projects can benefit from that. You don't have to build everything yourself, the community is working very hard. We should do everything for everybody. But you will be helpful by being part of this alliance. I should say the same thing that the small projects, you can't always contribute in a very big way to the infrastructure; you cannot build very large system, because the manpower you have will not agree that. So it is good to take something you want, and give back something. Although you could hard to give back something in major area, there are probably small areas where there are opportunities to give very important things back. I think we have two perfect examples here, on is Japanese project on VO Query Language, the other is India project, who has made major contributions to VOPlot.

Oh, I think also it is very important for the small projects to make good choices clearly when you start to develop something.

The IVOA standards are under investigating very heavily. Building these standards into your system is in very central point. At the beginning, you should be careful that it is a right choice, and take some actions to ensure this being consistent with to your system.

I think also it's important for small projects to be involved into the IVOA community, that why I just being here. There are also hard to some of the small projects communities to be involved into the IVOA working groups. This is because of the language. I speak too fast. It is hard for the Chinese group and other non-English groups. The International Virtual Observatory Alliance

should recognize this problem, and try to manage it better. It is important that several people around this table to register at the website and become member of those WGs.

I think, it is important for you to visit the IVOA website and register yourself as a member of the "community". Go to the website as starting when you think about setting up your project, and I encourage you all to be registered and to start working at some of the forums. Particularly, you can see what's going on here. There are a lot of reports coming up, papers of the very projects.

Ajit:
I feel there is a bias on which we meet. For example, if I plan to do something, I would work hard on it. But in virtual observatory community, I found that there are much higher-level activities. … During the last half an hour, I have learned quite a lot about what can be done, so when I go back we will use the standards….

Adopted from Masatoshi's email to Chenzhou
Humm. I think it is obvious that, in general, small VO projects can't do everything like other larger ones.
But you may contribute to implement some software components for general use, i.e., an engine to display VOTable, VOQL parser to ADQL, an engine to register its metadata of new databases to the registry and disseminate the metadata to other registries, and so on.

Of course you need to promote Chinese astronomers to make their observational data to be compliant to register to VOs, after you have prepared such a tool to register.

Masatoshi:
Yeah. I think you really give me a topic what I want to say. The other day, I communicated with Chenzhou, He wanted to know what interests for me on small project. I expressed to him very similar ideas. And I would like to say that small projects means small number of members. Therefore it is very easy for small groups to make decisions. (Peter,) you are the leader of a very big group, so I think it really difficult for you to make, you know, agreements. Many people have different opinions so you have to …but when the group is so small, it is quite easy. So I think that is a very important advantage for smaller, small groups. If you find very nice activity for a small group, you see for example, VO Query Language, you can focus on it. That will be nice truth even small projects can produce such focus, tools, which can be used for others VOs. Then larger groups don't have to develop similar tools. We can share. We can have the common effort.

Peter:
I think in the virtual observatory, we must be open to peoples. Somebody is doing something, where he is in Japan, in China, in Australia. We should make prototype of the observatory in the end. The best things we always win, people looks like the international, you find many of different ways of doing things, and anybody thinks, "Oh, this is a very good point". We should be open like this. We should open working.

The interests from software communities are very important for us. In the virtual observatory, also

in Japan, this is very interest and very important, as in China and in Korea, the similar interest. Is there soft company that interest in something training their people by giving them some problems? And this is a very good way of getting people. Is this possible?

Jianfeng Zhou:

Not from company, but students from computer science department. It is possible.

Peter:

… Particularly when choices must be made, you make choice about database, you make choice about grid, choice about something. To work with the communities around you, tell them what are you doing, this is very important.

In Korea, is there software community you can have as partner?

Sang Chul Kim:

Yes, we have been looking for some communities in Korea to build scientific system, but it is not easy to find good company. That is a problem.

Chenzhou:

I have contacted with Microsoft Research Asia. They don't like Grid, they don't like working together with us. You know, the China-VO hasn't gotten official funding. On the other hand, for example, IBM, IBM is a partner of China National Grid. China National Gird is a big project, and it has obtained large funding from our government. We hope work with them, but they don't want to work with us. We keep close collaboration with Computer Network Information Center, Chinese Academy of Sciences.

Andy:

So, we have to be carefully to distinguish the computer science academics and IT companies. They are very different, have different interests. If you want to make something work next year, i.e. very practical task, you can ask for someone from IT company. They want to make things to work. If you are looking to the future, and try to develop new interest things, as Peter said, to find people to work with, you can remember computer scientist. They just like us, they want to do interest research. However, sometimes they don't want to work for us. They want to do their research.

Peter:

They want the right project. We want the biggest friends; they can like the virtual observatory. He likes virtual observatory because astronomer has a lot of interest data, and so free, so for him. As a computer scientist, as a computer system builder, it is very valuable to him and it is valuable to us. I think we can find more situations for large computer to get in. He will has the same interest and probably he has the data, for these interests and then how we can work together with them.

Peter:

…And I think there are important that user needs will come from communities, some you find in particular project, That we see in Europe, there are some big projects, they have some particular

needs from the virtual observatory, and then drive us particular thinking. They has some particular demands, particular needs. To people, who providing money for them, you should say: we must have virtual observatory. Because without it, the people cannot see the data, use the data. This is important, we should teach the people who give the money, how important the virtual observatory mean to get the excellent science.

Peter:
Here, I wish we basically talk about four important things for small project, the role of the small project in IVOA, I think, they can take important roles in collaboration. I think, that small projects can be worked at different level.

I think what's the first important thing is the cause of the national level for the data center. I mean this small project, regional project cause national, regional project for long run. What they have to do is working with national community, the data center community, to try to help the data centers understand what the VO try to do; understand what kinds of things they have to do, help them to be able to put their content into this world. What's the next step for AVO? In Europe and next step, the project called Europe-VO, and this project try to involve all the data centers in Europe, so in China, in Korea, and in Japan. There are many data centers, some of which have very small metadata, some of which in the future will have very large metadata. I think it is important for those data center already to be talking with some other centers and talking with the international, with the IVOA .So the understand for the very beginning was they must be sure for the future. There is a lot of work can be done by the data center.

OK, second, I talk about the pipeline for a observation project, for example LAMOST, is very very important. … The telescope survey starts the data, which must be corrected, must be described in the right way, it must be right version data. So we start to talk with people who are people to build the data center and who are people to put the data information into the data center. Those people are very important. …This is important. The data center must know what they must to do to make the data visible in some VO. …

Finally, what they must do is education problem. … So there is some thinking which have to be changed. The thinking is data architecture is the way to make observatory successful. This is the way data is published, this is the way people can use the data again in the future. … Look at the data heritage. So the important thing is to choose the metadata center, it is a difficult choice.

People use the catalog very happy because they have the pleasure to share the information. But now, the things have changed, the world have changed. What is the change? It is that the catalog now needs some money to get from science. VO team must work with data center, to give their ideas, to help them demonstrate what they have to do. IVOA also must public some good documents.

So what is the important thing for the regional project must to do is to help the data center to build their architecture.

I think also it's possible for the regional project keep contribute to tools. There is opportunity for your project to give some special tools for the VO community, and it also important for the international community.

I think also infrastructure can be seen work group for IVOA. There are some cracks, there are some gaps, in the infrastructure, and there is not everything in there.

We'll very like to talk the workflow. It's important topic for everybody.

Because of language, because of the time and everything else, but I hope all to became member joining the IVOA home page, subscribe the mail lists. This can make us see what people talking, what people thinking, even though it is easy to get some comment, please look and try the discuss. This also applies for plans. One of the important aspects of IVOA group is not only technology, it's also standard for data exchange, for example UCD etc.

So there is the four things we have just talked about: data center, the tools, the infrastructure gaps and the standards.

Masatoshi:
East Asia region, and of course to expand to India, and Australia, if we expand to Australia, we can cover the hemisphere, so we have a very good starting ground. So this meeting is very good for me to join. At first, I thought I was too busy to be here, but now I think this is a very nice meeting for me. And what's more, we have some common goals so we should exchange information or experiences, and we can make common development, if possible.
… Personal exchange is very important. Yeah, physical meetings are important than network meetings.

Andy:
  But more expensive.

Peter:
  Now I think it is important if you having meeting regionally to use that opportunity talk about the virtual observatory. As I said at the beginning, I have been encouraging you to keep alive, the idea of regional virtual observatory community is interesting.

  There are some common things, common problems, and common projects, in the community. Region is important to capture not to lose that, that is a good way to working together to find common problems, common projects, this is important in Europe and also important here.

Chenzhou:
  Is it possible to arrange another regional meeting for East Asia next year on virtual observatory?

Andy:
  That's a good idea.

Peter:

I think that's will be good. We will probably have international virtual observatory meeting next year for working groups. Maybe in India, we have to discuss. This community should try to keep alive in the regional area, not just wait for the international virtual observatory alliance meeting which is big but you should also to keep your region alive .So I am very encourage the meeting again, maybe next year.

Yang Yang:

I have a question about infrastructure. Who is responsible for building global virtual observatory infrastructure?

Peter:

Nobody. I think the truth is the money, the responsibility, and the ability within the virtual project. The IVOA has no money, no people. Nothing. We are just group people who working together because these important thing to do. In Europe we all try to build across the infrastructure, the physical infrastructure and the software infrastructure for the virtual observatory in the European countries, which will be the European data center alliance.

Andy:

I think in UK, we have counter opinion about this. …We need to define standards, which may become the infrastructure of the IVOA. I think these include interfaces between projects. Because anybody will, when anybody builds a piece of software does this, if somebody also right, they would speak to each other. Then, we all follow the same standard.

Yang Yang:

Do you have any standard now?

Andy:

I mean, yeah, for software interface, the things approach that. First when we said the registry standard, they don't dictate how you build particular registry, they dictate how registry communicate information between each other, so you can build your registry, they can build their registry, and if you want to update your registry with information from their registry, then you can include their information as yours.

Peter:

So there are a number of immerging standards, which the IVOA wants to do. The registry standard is the most important one. That we have really share the information together, there are standard coming for the query language, there are data standards, a very important one is UCD, that we have only one version which is wide use astronomy already. We try to include further more description of the data. VOTable is now widely used as a standard for tabular data. I think it is important. Something like Fits, Fits is thirty years old, we have not imagined the standards of astronomy for thirty years, now we have tool, and I hope, we have VOTable and that is important, and there would be more as we go further, but I think VOTable now is being used by astronomers

and by non-astronomers and some other .So if you look the IVOA site, you will see in the documents the standards we have today. And IVOA in only way to do this, because we can strength the important of the IVOA, IVOA is speak for all the projects, and all the projects speak through it.

Chenzhou:

I think it will be important and very useful for small projects and other projects to reach an agreement about how to share the source code of packages developed by some projects. At present, we can only download java classes but not the source code.

Peter:

  We certainly discussed about this in the IVOA…

Andy:

  A model from the IVOA is running, the standard process they going through Working Drafts, Proposed Recommendation, Recommendation, but also the success of the site which made the standard to approach. This will be accessed rather than building a specific infrastructure. When and how you write a HTML file, it don't take the software, it just find the things. Lots of different pieces of software input the web. Anybody could do it. Then you know it works, speaking the same language, following the same rules. The web has not infrastructure, it based on the existing networks, physical networks, a very prefect infrastructure, but the web itself has not infrastructure

Yang Yang:

  You mean the content of the web page has no infrastructure, but I think web site itself has the physical infrastructure.

Andy:

   Yeah, anybody can run the web server if you know the rules. You don't have to use specific pieces of software, you don't have to make different portals between each other and certain structure, you just follow the rules, and you will run.

Yang Yang:

  My question is when we design a VO, we have to obey some rules for standards, but as I know, there is no successful, complete VO project has been setup, and we can use it to test. So I think if we have to build VO, what kind of rules we have to follow?

Andy:

  What you said is not quite true I think. We will believe a success VO shows work. Lots of people are really using VOTable in the Data Access, not just in demos. VOTable is real. … That's I think we have to look for the next year or two when particular basic software input the standards. Then you can write your own, but not the time now. I will take this truck code and store it, then I add to it. That is we have to see what comes next year.

Zhou Jianfeng:

How can we use VO? For VO, although now we have several VO projects, for astronomers, most of them don't know what will VO look like. How to use VO? Is VO still just a research?

Peter:
There are 14 projects in IVOA, each those projects follows particular needs and particular goals. What we have decided to do is to give demonstrations. Every year, we give a demo on what we are doing to the IVO. AVO project, we have science working groups, we have 35 astronomers from Europe. And we ask them to give us some test cases, some kinds of things they are doing for which virtual observatory can help, we design some functions of the observatory, and we show them every year we give a demonstration of what we can do using VO. Last January, we did a demo. … This coming January, we will also show a demo … and we try to implement registry. These things will be implemented inside VO portal, and VO portal that's using in Europe as a prototype. So astronomers in Europe ready can see how a VO portal may look. Someday in the future, we can get some feeling for what is VO.

Andy:
First is the history of 30 years, if you try to run software projects, you have to fix the ideas, you do the first idea then requirements, then the detail design, then you develop the software. A Software projects is never finished. Successful projects work from small bytes, and gradually build up. … Any of the small projects will have users or a way to get astronomers to be involved the project, let them say, what do you think, what do you want, do you like this?

Chen dong:
In my project, we have some astronomers to give ideas. Every two months, we will meet to see the progress, and if the internet connection will be solved by the Chinese Academy of Science in the end of this year, we'd like to integrate three parts of old data together. In our small project, the astronomers and the engineers worked together closely, and I think it is very important. They are all users, they will form my user community, they will give us some their requirements.

Zhou jianfeng:
In my small project, we closed with the astronomers. Sometimes they give us good ideas. We must persuade them do something to improvement our system.

Zhou Jianfeng:
I have a suggestion. We have some particularly program. Could we send younger people to NVO, AVO project to work, maybe half of a year, and people from AVO comes to china, and tell us about what virtual observatory or IVOA is going on, because just from the internet it is hard to communicate.

Peter:
Yes, it is possible. Before people come, we have to find the rules for this event. But I think, that is a good idea. I think already between some big projects, because the big projects were set up between each other in mind, and it good to all the projects. …

Andy:

I just heard our government started a program for Ph.D.s from China, Russia, and India to go to UK. … It is really nice if we can capture suitable astronomer from similar programs in other countries.

Peter:

I think there is a big opportunity for you to play a role, a strong opportunity for virtual observatory. I encourage you to be thinking about your role in international virtual observatory. I think the quality of the people who is working on VO is very high and the quality of the things we thought is very high. So it is a very important and very good meeting. I want to thank you for giving me the chance to come. Thank you, particular ChenZhou, for doing a lot of hard work, to organize such a nice meeting. And wish everything success, I think you have a lot of the good people and good ideas, I encourage you to continue this meeting, to make it important meeting for you.

Chenzhou:

Thanks everyone very much to attend the meeting. Please let me invite Prof. Zhao give the closing address for the meeting.

Zhao:

This is a small project meeting, I think Dr Peter's coming is very great, because he has many work to do. I think in our country, VO is a new thing, a developing project. So it is difficult for us to get some funding, but I think we have the IVOA. So we have the important international community. I think it is a strong support for us, because we can exchange information, experiences and software. We can get data from the IVOA, it is a propulsion for us. And also we want to make tight regional collaboration. There are many small projects, so we need to identify what we can do, what we cannot do.

The deputy director of NAOC, Prof Zhao Gang, who is very interested in VO, in the first time, he planed to attend this meeting, and want to say something. He is too busy to attend the meeting, but he will give some money to support the meeting.

The last one is to thank you everyone to attend this meeting and also thank the people organized this meeting. So, thank you everybody!

Further Reference:

Notes for the workshop by Andy Lawrence, with help from Keith Noddle and Catherine Quin