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brates the tenth anniversary of our Society. Ten years during which EAS has grown to maturity. Ten years during which European astronomy has changed significantly, as Catherine Cesarsky recalls in her article. But what about Europe itself?

In 1990, we were still in a state of euphoria after the destruction of the Iron Wall, which at last made possible the reconciliation between Eastern and Western Europe. Suddenly there were no restrictions anymore on travel and scientific exchanges, and it seemed almost as if we were entering a new Golden Age. But what is the present situation?

Because the Eastern European countries were not prepared for such a radical change, and because the Western political leaders did not come up with an ambitious programme to help rebuild these countries, such as the Marshall plan after the second world war, many of these countries are now in desperate economical condition. As a result, fundamental research is no longer a priority. In recent years I traveled to several of these countries, and I could see for myself how difficult life is for our colleagues there. Many are forced to seek part-time jobs, more lucrative than their academic position. They struggle to maintain their equipments in working condition. But their main concern is that young people are not attracted anymore to scientific research, given the salaries they can expect. Many institutes are bleeding from emigration, and are unable to replace those who are gone.

What can we do to remedy this situation? In spite of our efforts, EAS still has a modest impact on European astronomy. But it helped to make Western astronomers aware of the problems of their Eastern Colleagues, and it has contributed to stengthen the collaborations between them. We are backing Euroscience, which shares our goals on a more general level, and which has established close relations with the European Community

MESSAGE FROM THE PRESIDENT

As announced in the last issue, this Newsletter cele-

and the European Science Foundation. More and more, these are taking measures to associate Eastern Europe in planning the future, and to bridge the existing gap. At the plenary conference on research infrastructures which was held September 20 in Strasbourg, the steering committee stressed the importance of establishing a high bandwidth communication system across Europe (meaning whole Europe), which would give wider access to journals, data banks, etc. for those who presently suffer from poor communications. One of the goals it set was the development of human resources and the promotion of training. It recommended that the so-called accession countries should be involved in the development and exploitation of the research infrastructures, from advice to decision making.

Thus, slowly but steadily, European research is shaping up. How much progress will be there achieved when EAS celebrates its twentieth anniversary?

Jean-Paul Zahn

EDITORIAL

Our ten year anniversary. Indeed! Time flies and there are several articles to celebrate this occasion. This special occasion makes all of us very skeptical, when we consider our achievements and weaknesses.

It is obvious that our services to young people is our major field of incompetence. This is due to our poor funding and our problem to act as an integrated community. This is such a slow process! We definitely need a Web page providing services to help the young people.

We must not forget the effort done by Michel Dennefeld with the Web page, all on a volunteer basis. In order to improve this web page and transform it to a real facility, we either need many more volunteers and/or more funds.

At the University of Athens the computer center has agreed to help us technically to organise our young people's page and extend its capabilities, to electronic seminars and short live communication (discussions, short meetings). All this could be an experiment of virtual mobility. However such an initiative needs money and no sponsor has been found so far. We cannot organise all this on a voluntary basis. I would suggest the international organisations (EU, ESA, ESO etc) make a birthday present to EAS and be the sponsors of such an activity). To emphasize all I said we close this special issue with a letter sent by a young astronomer from Im-

perial College, during the forum we had organised two years ago.

Two more interesting articles on IAU and the World Space Observatory. These two articles are not just a piece of information each, but they provide important thoughts and innovations on the development of scientific collaboration organized in a global framework.

Mary Kontizas

EAS ANNIVERSARY

TEN YEARS EAS

Ten years ago the EAS was founded by A. Boyarchuk, M. Huber, J.P. Swings and myself. Has it lived up to our expectations and those of the 600 founding members who joined us and many of whom participated the first EAS meeting in Liege? Have the fears of its opponents come true? With regard to the latter was opposition by some in the national societies. Perhaps they feared a loss of influence for these. Others thought that a grouping of national societies was a more desirable goal a European Society of national societies rather than of individual members. They feared that the EAS, as conceived, might work at cross purposes with the national societies.

As it has turned out, relations between the EAS and the national societies have become excellent. In particular the JENAMs - the joint European and national astronomy meetings have been a huge success with increasing attendance, starting with some three hundred in Edinburgh and culminating with nearly a thousand this year in Moscow. Also at Council level relations with the national bodies appear to be very smooth. It is more difficult to be sure that the EAS has lived up to expectations though there are encouraging signs. The number of members has increased from 600 to 1600. The Newsletter and various web related activities have been successful. And one of the original aims of creating a bridge over the political divide in Europe - now replaced by an economic divide - has had some small successes.

However, a comparison with the AAS on the other side of the Atlantic shows how modest the role of the EAS still is. The AAS with an annual budget of some 8.000.000 US dollars publishes two major journals, has an office with influence in Washington, engages in extensive educational activities, and organizes meetings that few young PhDs looking for a job will fail to attend.

The main problem is that the EAS came late in the day when other arrangements for publications were already in place, while recruitment of young astronomers still proceeds largely on a national basis. However, in the EU the “European research area” is gaining in importance, and with the current in publishing methods the EAS could have a role in ensuring that these satisfy the needs and wishes of European astronomers.

Even more recent than the EAS is Euroscience with membership in all the sciences. Notwithstanding a rather low number of members, it has been not unsuccessful in assuming a certain role as an adviser to the European Commission. In astronomy “Opticon” has obtained European funding and may in the course of time acquire some influence. It is important that the EAS, which is after all the most representative organization in European astronomy, relate effectively to such activities.

Long before the terminology “European research area” came into being, intergovernmental organizations like CERN, ESO, ESA and others pioneered the concept with much success. Unfortunately, during the last few years a trend has developed for European governments to again prefer bilateral or multilateral arrangements for specific projects. An example is given by the complex structures of the ALMA (Atacama Large Millimetre Array) where ESO and representative of governments participating in ESO participate in the leadership. Of course, this enhances national control. Even though the governments have their representatives in organizations like ESO and ESA, there is a wish for more direct influence. Part of the reason for this may be that the large countries have the same vote in many areas as the smaller ones and consequently per astronomer or physicist a lower weight. Not surprisingly the smaller countries are the most enthusiastic supporters of European solutions! Certainly this is not an isolated problem for scientific institutions. The issue is becoming particularly acute in the EU in general, especially after its possible enlargement.

Though many problems remain and new ones appear, it is true that the level of European cooperation has improved immensely. A new self-confidence is seen and through doctoral networks and other mechanisms European astronomers regularly work or study in countries other than that of their birth. Compared to half a century ago, the progress is evident. But it is sobering to go back further into the past. During the later middle ages study abroad was common. In 1158 the emperor Friederich I made a decree protecting from interference all scholars who had to travel to the newly founded Uni-

versity of Bologna where students from all over Europe were congregating. Thus, some of the progress in European integration is rather the recovery of what existed before. But then at the time there were no organizations for research funding.

L. Woltjer

ANNIVERSARY OF THE EAS

The European Astronomical Society was founded at a time of profound and optimistic change in Europe, a process of liberalisation, unification, development and enlargement that is still happening. EAS is celebrating its anniversary with a record behind it in establishing its successful European regional meetings - the Joint European and National Astronomy Meetings - and in setting up a network of European astronomers, kept in touch via the newsletters, the website, the lists of members.

This anniversary is an opportune time to reflect on how the EAS structure can be developed to do more. In the next decade, the EAS should develop as a forum for the debate of European policy in astronomy, and become a motive force for astronomy in Europe, as well as a facilitator for discussion. The European Commission has vision for a “European research area” whose tone will likely be set by a high-level science discussion forum, akin to the US National Council of Science and Technology. Its recommendations would be implemented into projects, supported by the EU, and by member states on a pick-and-choose basis (“variable geometry”).

The task of the EAS will be, first, to influence this body through the considered views of the European astronomical community about the development of our science. Secondly, it will need to amplify decisions back into the national communities whose voice will determine an individual member state’s adherence to the recommended astronomical projects. This is a challenging role for the EAS, and needs much thought, if the EAS is to flourish in this future environment.

Paul Murdin

EAS AND THE EAST-EUROPEAN COUNTRIES

The European Astronomical Society reaches 10 years. It was founded in an extremely important moment for Europe: the fall of communism in those countries whose people believed, or hoped, or were compelled to believe that this is the solution for progress and for a better life. Romania was one of those countries. After that December of 1989, dramatic for the ones who experienced it, but also for all people who watched the “revolution on-

line” on their TV screens, we tried to resume a normal life, stopped for us half a century ago. We attempted to retrieve the uselessly wasted time, and to approach as soon as possible the rest of Europe, whose geographic center lies, paradoxically, on the territory of Romania. This is where the Romanian astronomy was ten years ago.

What was before? It is hard to explain and equally hard to make understand those who did not live in similar conditions. How could one survive totally isolated, not only from the Western astronomers, but even from those of the Eastern countries, without modern instruments, without books and journals, even without the already common PC’s? How astronomy did not die in a country in which, besides the difficulties experienced by all our eastern colleagues, we also had to pay all the debts of the state? We had to do astronomy for... the national economy (!), to work 48 hours a week, and to do agriculture on Sunday. We often were compelled to wait on the street, for long hours, in order to wait the the Leader’s parade. Under such conditions, how astronomy survived?

However, we did it. It was possible because the places in research institutes were reserved for the best graduates (low marks meant small chances to obtain a workplace “in town”). It was possible because of the lack of any entertainment (a good book was difficult to procure, the daily TV program - two hours only! - was fully dedicated to the “beloved leader” and to the “victory of socialism”) leaving science the only real intellectual heaven, the only place in which politics hardly found a place. Decades after decades, science helped us to forget the cold, the darkness, the long queues formed to buy bread, the “Securitate”. It was the only refuge, in which we found a bit of peace. It’s little? No, and we can prove this: it revived quickly enough, in spite of all the economical difficulties the country faces, whose consequences are illustrated as an unprecedented brain drain.

We are saying all this neither to produce pity, nor to excuse ourselves, but to show that difficulties of this kind, can be surpassed just by joining all forces within the framework of scientific unions such as the European Astronomical Society.

How is it possible? It started by its foundation, in 1990. For the first time atromomers from the Western and Eastern Europe sat down at the same table to discuss the problems of astronomy and of the astronomers as well. After all, here, in Europe, the cradle of universal astronomy, we have the most famous observatories

in the world and here the outstanding personalities of today’s astronomy are working . But here also a still, poorly exploited potential of intelligence and creativeness exists : the one provided by countries as Romania, in which the lack of contacts made the national astronomy remain practically unknown. However the higher and higher number of youngsters, who were trained in the most important astronomical centers all over the world, and obtained exceptional results and the significant increase of the number of papers published in cooperation with astronomers of other countries prove it.

The yearly JENAM, already well-known, offers an unprecedented opportunity for astronomers to better know each other, to keep the level of astronomy in the West and the East the same, to help East-European astronomers to learn quickly how and why the West progressed, and West-European ones to know the possibilities of the Eastern astronomy.

Not only the annual meetings contribute to all this, but also the exchange of specialists and publications, as well as the donations (collections of journals, or books) for the libraries that have not the possibility of regular purchase yet. Other such contributions such as the courses given by renowned specialists within the framework of European programs (e.g. TEMPUS, ERASMUS/SOCRATES) or the aid of the Cultural Departments of Embassies, or the research performed in cooperation (even via e-mail).

For astronomy, Europe means the European Astronomical Society. Ten years already was an experience, already meant remarkable results. Maybe after some decades, such a continental society will become useless, but NOT TODAY. We need its existence and the spirit of European unity inside it. We need it, to successfully cop with the competition of the space techniques, the competition of the great observatories, We hope, along with all its members, that the European Astronomical Society will succeed in doing better and better. After all, its success is the success of all of us, astronomers of Europe, no matter Western or Eastern, even if sooner or later these ones will recover their simply geographic significance.

Magda Stavinsky

THE EAS AT 10: A PROMISING YOUNGSTER

Seen through American eyes, the EAS at age 10 is a typical European kid, multilingual, mature in some ways and backwards in others, well behaved in public, but not very aggressive, and in need of a larger allowance.

These can stand at least as metaphors for some aspects of where the Society currently finds itself in the worlds of astronomy and of scientific societies.

It is, of course, the multilinguality that Americans envy most! Meetings of the American Astronomical Society cycle among Seattle, Atlanta, San Diego, Washington DC, and other sites up to 3000 miles apart, and they are, frankly, all rather similar. The same distance will take you from Lisbon to Moscow, crossing 10 or 12 countries as you go, about half of which have so far hosted Joint European And National Meetings (JENAMs), events for which there can be no American equivalent.

Despite speaking only one dialect of one language, I am a founding member of the EAS (as a result of having been at the “right” or “wrong” breakfast table at an IAU function, with the founding president and treasurer), and the subset of JENAMs I’ve attended have been a major “benefit of membership”. But, truthfully, I joined primarily in hopes of eventually receiving a membership directory that would represent the European community with as close to completeness as the AAS directory represents our community. This has not, so far, happened.

The current EAS membership is about 2000 (vs 6000 in the AAS, with a comparable “parent population” to draw on) and includes quite a large fraction of the astronomers from the former Soviet Union and parts of Eastern Europe, at least partly because their membership dues were initially waived, but the Western European membership is less complete even than that of the International Astronomical Union, and young Western European astronomers seem to be missing almost entirely. Incidentally, the European Physical Society (yeah, I was a founding member of that, too), though it is older by a factor of three and bigger by a factor of 10 (in individual members and about three in associated national societies) shares this incompleteness and has actually given up trying to produce membership directories.

Two obvious causes contribute. One is an “image problem”. Very few astronomers perceive the EAS as their primary professional affiliation. This loyalty belongs to national societies as a rule, or, just possibly, to the IAU. The other is the reality that young astronomers do not gain much “value for money” by joining EAS, even in comparison with AAS.

Can I suggest improvements? Yes, of course, and they are the same ones you have already thought of. Perhaps first and foremost is an active, complete job center – a

physical one at meetings – where young astronomers can meet more senior ones from institutions that are hiring, and an on-line one in between. The format would surely be different from the AAS job listings, since there will be varying conditions on nationality and residence, and perhaps also age and gender (forbidden under US laws). But the main point is completeness. A new PhD will tune in if she can be sure that she is seeing all the opportunities. Other programs young astronomers might appreciate include social events just for them (no tenured scientists allowed !) at meetings and formal arrangements for mentoring and guidance on writing proposals and responses to referees’ reports.

Second comes achieving a higher profile within European science and within astronomy. A minor example: November will see a “Physics on State Stage” Festival in Geneva, coordinated by CERN, ESA, and ESO. The EPS is participating, but astronomy will be represented by the European Association for Astronomy Education, rather than by EAS. This sort of outreach and education territory is one where more aggressiveness might be appropriate.

And third is expansion of the membership, so that the directory (in due course on line if it isn’t already) enables you to reach the vast majority of European astronomers, for whatever reason you might want them. The reasons include asking people to give colloquia and talks at meetings, finding referees and peer reviewers for papers and proposals, assembling committees, working groups, task forces, advisory panels for missions, and all the rest. Not all astronomers want to help with these things, you will say. Well, perhaps. But you (as a reader of these pages) are already doing your share by belonging to EAS, and your membership will become more valuable – and the tasks be more fairly shared – as the number of members grows.

Now, here’s the rub. Job centers, reduced student membership fees and social events, planning of large meetings, outreach and education, and membership recruitment all have costs. EAS dues are currently much smaller than those of the AAS, the RAS, and some other national societies, though comparable with those of the EPS. Would members, at least those in relatively prosperous countries, be willing to pay more to get more? Truly, I don’t know. But it is guaranteed that more members at constant dues rate will contribute more in total, and there are economies of scale!

So, let’s get out there and recruit. For me the “target group” is young European astronomers currently in the USA, who plan eventually to return home. Your target

group will probably be different. And, if you happen to be reading a library copy of this newsletter, YOU are part of the target group, so please send your check (for 50 CHF) or credit card information to the Treasurer, Birgitta Nordstrom, Astronomical Observatory, Juliane Maries Vej 30, DK-2100 Copenhagen, Denmark. And together we can ensure that the European Astronomical Society becomes a healthy teenager.

Virginia Trimble

TEN YEARS THAT CHANGED EUROPEAN ASTRONOMY

The past decade has been one of the most productive in the entire history of astronomy and astrophysics. This is true on a global scale, and in particular on the European continent. While the 1970's and 1980's marked the emergence of many new ideas and the foundations were laid for several major technology-intensive projects, our science has accomplished a giant leap in Europe during the past 10 years.

In 1990, when the European Astronomical Society came into being, one of the major dreams of European astronomers, the ESO Very Large Telescope was in its third year of realisation. Following the historic decision by the ESO Council in December 1987, associated activities were gaining momentum all over Europe. It is an interesting thought that in that year, Paranal was still a remote mountain, only disturbed by a simple site testing hut at the top of its perfect pyramid. One year later, in 1991, it was decided to place the VLT there. Recent pictures obtained of the Paranal Observatory impress by the enormous transformation that has taken place since, creating the world's foremost optical/infrared observatory at one of the best astronomical sites of the world.

It may be no coincidence that the positive political decision that led to the funding of the VLT project, was to a large extent due to the persistent efforts by this organisation's former Director General, Lo Woltjer, who also played a leading role in the founding of EAS. In fact, ESO and EAS are children of the same desire, to unite European astronomy, providing effective fora for the continued progress in astronomy and astrophysics on our continent.

In the meantime, the VLT array has entered into action and already now, just 18 months after the first of the four 8.2-m telescopes was handed over to the astronomers and a few days after the first light of the fourth telescope, numerous research projects have obtained data that are resulting in front-line papers. In parallel, the EAS is developing into a useful gathering

ground for European astronomers, as shown by the success of the recent Toulouse and Moscow meetings.

ESO is honoured to be one of the co-organisers of the forthcoming EAS meeting in Munich in 2001. I am certain that this location, with its vibrant astronomical community, will be a great attraction to colleagues from all over the world and I look forward with pleasure to an intense exchange of the latest results. I have little doubt that a substantial number of these will come from ESO's facilities, many of these within joint projects with other telescopes on the ground and in space.

With the VLT a reality and the VLTI, ALMA and OWL on the horizon, with no lack of new space projects and an increasingly strong interaction among Europe's astronomers thanks to new networks and growing support also from the European Union, I am positive that the next decade will be even more exciting.

I wish the EAS and its members all the best for the future and look forward to a close collaboration during the coming years on a personal as well as an organisational basis.

Catherine Cesarsky

THE FIRST 10 ISSUES OF THE EAS NEWSLETTER

The first issue of the EAS Newsletter is dated from November 1991, the 12th issue November 1995. It was my privilege during that time to edit and issue this small journal for the European Astronomical community. The format of these 12 issues has been the same from the beginning onward. We aimed at giving news of the society through the message of the President, that of the Treasurer, description of the constituency and our meetings, we wanted to describe the astronomical community and its tools, be they on the ground or in space, and to provide one longer article on some specific matter that we thought might be of interest to the members. We also established a tradition of exchanges with the newsletter of the American Astronomical Society and other important astronomical societies in the world.

The aim of the Newsletter was to contribute to the making of the society. We started working few months after the Davos meeting that saw the birth of the EAS and thought that it was important for the members of this new structure to not only pay their yearly fees, but also to receive from the society a tangible sign on a regular basis. We thought that this helped the European astronomical community to forge an identity that we wished both strong and open.

Forging this European astronomical identity is difficult as we each are already part of a national astronomical community and often do not realise the need for yet another identity. It was the belief of the founding members of the society, however, that this continental identity is essential to progress when the scale of our large projects is much larger than can be carried out within a national community. General meetings and the newsletter are the tools we have to progress in this construction. Hence we had when working on each issue the impression of making a -small- step in the right direction.

Looking at our efforts after a few years one realises that even if the work was hard the result is modest. Many people will have to improve on the newsletter we produced and show tenacity over a long period of time in order to make our society the strong continental point of focus for astronomical matters we wish and to make the voice of the European astronomers heard loud and clear.

Thierry Courvoisier

SPECIAL REPORTS

WORLD SPACE OBSERVATORY (UV): A NEW APPROACH TO SPACE ASTROPHYSICS

1. Introduction

The World Space Observatory concept was originally proposed at the 7th UN/ESA Workshop for Basic Space Science and formulated in the context of the needs of Basic Space Science in the developing countries in the report of the 9th UN/ESA workshop (A/AC 153.702). There the WSO was defined as a mutually beneficial and valid scientific mission for all scientists in the world and not confined only to the developing world. In the context of the Long Range Planning of the European Space Agency an Assessment Study was made for the UN Outer Space Division in the Concurrent Design Facility (CDF) at ESTEC, evaluating a WSO Mission for the ultraviolet domain (WSO/UV), based on the characteristics defined during a meeting held at ESTEC on 26-29 Nov. 1999, between scientists and others who had expressed interest in a WSO/UV. The WSO/UV mission defined, has the following characteristics:

- i) Telescope 1.5- 2.0 m diameter (T-170 from Russian model; IoA Acad. of Sciences; Shustov, 1998).
- ii) Spectrograph for the UV only: primary 110 - 340 nm. (**HIRDES** from German model; IAAT; Kappelman et al., 1998) with spectral Resolution $5 - 6 \times 10^4$; as well as a low resolution capability (500-1000).

- iii) PSF for spectra: < 0.3 arcsec.
- iv) Imaging : 115 - 340 nm with quality $\approx 0.1 - 0.3$ arcsec (**MCPbased** Israelian model; TAU; Brosch, 1998); 2 Imagers : one for Max. spatial resolution; one for Max. sensitivity.
- v) One imager for visual domain
- vi) High Earth Orbit.
- vii) Further overall properties of the mission as a whole as described in UN A/AC.105/723.

The WSO/UV, being an Astrophysical Observatory rather than a mission purposed for an narrowly targeted science goal, fills an important gap in the capabilities, expected to be available to the astronomical community at the possible launch date in 2006. This is especially so, because the sensitivity and resolution supplied in WSO/UV are excellently matched to the capabilities of the current generation of X-Ray Observatories in space, the 8 - 10m size ground-based telescopes, and future IR missions (e.g. NGST). The sensitivity and resolving power of the combined observational capabilities will give the future astronomers a new view of the physics of the history of the Universe. The capabilities of WSO/UV have been chosen to be such that it will not duplicate any capability available from the ground nor in space. The definition of the operations philosophy of the WSO/UV will assure that it can support a very dynamical development of its science program over the extended life span of up to 10 years. This is essential for a mission of this nature which will allow the full participation from its very beginning of the scientific and technical community on a world-wide scale.

The WSO/UV is very well timed, since there exists a critical "time slot" which is open due to the fact that, after the UV Survey (GALEX), no pointing "observatory-mission" is foreseen to explore the rich new data which will result from this Survey. Of course some time in the future a Next-Generation UV mission may happen. However a realistic time frame for such mission is very difficult to give since it will depend strongly on the developments needed for the first Next-Generation Telescope as well as major technology developments in the detector and coating area. The utilisation of the top technology currently available for WSO/UV, will actually facilitate the transition to such high risk technology developments to be made.

2. Science Goals

The WSO/UV fills a lack of observing capabilities for astrophysics in the 120 to 360 nm range. We will here below summarise some of the astrophysics areas for which the WSO/UV will be capable to answer fundamental questions and contribute, in an essential way, to solve currently pending questions with respect to evolu-

tionary aspects of the Planetary System, Stars, Galaxies and the Large Scale Structure of the Universe.

In the Planetary System Science, we can mention the study of global atmospheric circulation and magnetospheric interaction. The gaseous planets present a superb laboratory for the understanding of weather patterns on scales less stochastic than the terrestrial patterns, which are also subject to influences caused by human activities. Of course a major contribution is also in the study of Comets For Stellar Science the complete life cycle of stars can be studied with many new discoveries to be expected. The project could make major breakthroughs in the modifications to stellar evolution as a consequence of the multiplicity in star systems, through the detailed studies of the effects of close binary mass exchange and accretion on condensed objects. Also the rapidly changing shock phenomena in Young Stellar Objects and the physical mechanisms driving jets in such objects, form an extremely exciting area of application of the WSO/UV.

The studies of Interstellar matter and Galaxy population will allow the evaluation of the chemical evolution of Galaxies and the cycling of Interstellar Matter, which continue to pose fundamental questions. The capability to study such phenomena systematically over the full range from zero to high redshifts at the resolution supplied by WSO/UV, presents a very important contribution of the WSO/UV to these fields, and will connect the early Universe with the current epoch.

Cosmological questions associated with the re-ionisation phase are well within the capabilities of the WSO/UV. We mention here discoveries of Comets and their behaviour during their passage near the Sun, Novae, Supernovae, Gamma-ray Bursters, OVV's and others, are a strong components in the science addressed by the WSO/UV. It is specifically the rapid response capability required in the mission, which will present new major challenges to the scientists.

3. How relates the WS/OUV to the developing World? In many developing countries, the significant investment in education is not bearing the desired fruits. This is closely associated with the fact that participation in advanced science can only function efficiently in the industrialised world. Consequently, investment in education often results only in the creation of a consumer market, without the creation of the professionally well-formed, culturally and intellectually identifiable, and academically oriented cadre of scientists that is necessary for sustainable development. It is clear that there exists a strong need for a fruitful interplay between the academic and the commercial sector of the population, not solely driven by the last.

Without the relatively small fraction of the population

driven by the pursuit of intellectual progress, such a synergetic process cannot be sustained in the context of its original socio-cultural climate. For an accelerated and sustainable development -essential for all future projections of the world economy- to have any chance of success, quantum leaps in development in various areas are essential. Space sciences supply a unique medium to accomplish such forward jumps

The world space observatory embodies a three-fold goal: 1) To create opportunities for participation at the frontiers of Basic Space Science, on a sustainable basis and at the national level, by all countries in the world, without the need for excessive investment. In so doing, the observatory will make an important contribution to the development of an academically mature and competitive cadre in many developing countries within 5 to 10 years after inception of the project by offering equal opportunities to astronomers all over the world; 2) To generate the possibility that engineers/specialists for electronics, detectors, etc. from the developing countries should come to the engineering groups for short periods of time and learn to built, handle and test etc. the WSO/UV hardware and carry this back to apply in their own environment. The limited previous experiences with such procedures indicate that this a very good way for accessible and locally supportable technology transfer. 3) To support world-wide collaboration and to ensure that the study of the mysteries of the universe from space can be maintained in a sustainable way by scientists from all countries. This will not only maintain the curiosity-driven spirit of discovery that is an integral part of sustainable development, but also make a reality in the scientific world of the visionary principle that space is the province of all mankind.

The WSO/UV will assist to drive development internally in countries and will contribute significantly to infrastructure and higher education benefits to both the political and general population in the developing countries. As the WSO/UV is also of great interest for the scientists in the developed world it could generate a very strong stimulus to enhanced and sustained development, through a strong mutually beneficial, interplay between the scientific communities. This will not only have its impact in the sciences but equally, or even more so, for politics, the humanities and applied technologies, because it will create locally identifiable familiarity with the Basic Space Sciences. The detailed motives and reasons why a WSO and in this specific case a WSO/UV would fulfil those criteria can be found in UN A.AC/153.702. Also many aspects of the Vienna Declaration (UN A/CONF.184/6) are in their totality applicable to the WSO/UV.

Further information can be found from the author or at:

Willem Wamsteker

THE INTERNATIONAL ASTRONOMICAL UNION:
NEWS AND VIEWS

On the threshold of the new century, the International Astronomical Union (IAU) met again in Europe: the 24th IAU General Assembly (GA) took place at the University of Manchester, United Kingdom, August 7-18, 2000, at the invitation of the Royal Astronomical Society and the Royal Society. Nearly 2000 astronomers from all over the world met for two intensive weeks of longer and shorter scientific meetings covering all branches of astronomy, for business meetings of Divisions, Commissions, and Working Groups, and above all to meet old and new friends from near and far. On behalf of both the Union and the participants I thank Co-Chairs Rod Davies and Dennis Walsh of Jodrell Bank Observatory and their helpers for the immense efforts they had invested in arranging a GA which by all accounts was a great success, both in scientific and social terms. On the IAU side, Monique Orine and Jodi Greenberg in Paris are the reasons why the undersigned survived to write this article.

The five Symposia held at the GA covered topics from advances in cosmology to solar physics and extrasolar planetary systems, with the extragalactic IR background radiation and the fine details of galaxy structure in between. All were well attended, and especially the new discoveries of extrasolar planets attracted much attention also from the Press. 14 Joint Discussions covered topics from fundamental astrometric reference frames over Trans-Neptunian Objects, Space Weather, and topics in stellar astrophysics to galactic magnetic fields and radio sources in distant galaxy clusters. A Special Session dealt with conditions and strategies for Astronomy in Developing Countries. The attractive daily GA newspaper, "Northern Lights", expertly produced by veteran Editor John Mason and the indefatigable Patrick Moore, kept participants up to date on the events.

Both scientific and social evening entertainment was offered: True to tradition, three Invited Discourses gave us splendid accounts of our current picture of an accelerating Universe (R.P. Kirshner), extrasolar planetary systems (M. Mayor), and our Galaxy in 3D as seen by HIPPARCOS (M. Perryman). The opening day featured a welcome reception by the Lord Mayor of Manchester in the Gothic City Hall (with graphic

frescoes showing the expulsion of the Danes in earlier times!). August 11 we enjoyed a wonderful concert of (mostly) British music by the Royal Liverpool Philharmonic Orchestra in the beautiful new Bridgewater Hall, all arranged - from programme, orchestra, and soloist to sponsorship - by the vigorous and youthful octogenarian Sir Bernard Lovell, the founder of Jodrell Bank Observatory. And many participants joined the tours organised in conjunction with the GA to surrounding historic and scenic attractions.

The GA welcomed Cuba, Jordan, Morocco, and the Philippines as Associate Members, while F.Y.R. Macedonia and Uzbekistan had joined already in 1998 and 1999. Also, Franco Pacini (Firenze) and Hans Rickman (Uppsala) were elected to succeed Robert P. Kraft (Santa Cruz) and the undersigned (Copenhagen) as President and General Secretary, respectively, while Ron Ekers (Sydney) and Oddbjorn Engvold (Oslo) became new President-Elect and Assistant General Secretary. Kenneth Pounds (Leicester), Silvia Torres-Peimbert (Mexico City), and Robert E. Williams (Baltimore) were elected to replace outgoing Vice-Presidents Claudio Anguita (Santiago, deceased March 2000), Bambang Hidayat (Lembang), and Virginia Trimble (College Park/Irvine), while Catherine Cesarsky (ESO), Norio Kaifu (Tokyo), and Nikolay Kardashev (Moscow) were re-elected to a second term on the Executive Committee (EC). New Presidents for all Divisions and Commissions were elected and 703 new Individual Members admitted, bringing the members to about 8,900.

Not only persons changed: Commissions 8 and 24 merged into a new Commission 8 (Astrometry), and Commissions 38 and 46 and the EC Working Group on the World Wide Development of Astronomy into a new Commission 46 (Astronomy Education and Development). The EC Working Group on Antarctic Astronomy was dissolved as having accomplished its mission, while the former EC Working Group on Planetary System Nomenclature has been reassigned to Division III (Planetary Systems Sciences) under a new, consistent set of Terms of Reference for the nomenclature committees for all bodies in the Solar System.

These were the basic facts of this year's GA. While most participants are back to their normal duties - and our hosts hopefully enjoying a well-deserved vacation - others are busy compiling Symposium volumes and the Highlights of Astronomy and Transactions which will shortly appear in print to remind participants, and inform others, of the science and business that took place in Manchester. Others again are already at work preparing the next GA in July 2003 in Sydney, Aus-

tralia, while our Czech friends are beginning to brace for the impact of our return to Prague in 2006. And we have already received indications of interest from China and Brazil to host us in 2009, so stay tuned !

Looking back - and forward

In addition to factual news, the Editor has asked me to reflect briefly on any changes in IAU policies or structures that have been initiated or completed during these last three years. The IAU is a multi-faceted experience indeed, and the choice is not straightforward. Some innovations like the face-lifts of the IAU Information Bulletin and Web site (www.iau.org) are immediately visible to the membership. Other, more profound changes will only succeed, if at all, several years into the future, and then only through the efforts of my successors and many other dedicated people throughout the IAU. Let me mention a few of these long-term items in the following.

The 1997 GA in Kyoto gave clear orders to the IAU to find more effective ways to deal with the environmental challenges to astronomy than had been found so far, and this has been our top priority item. In the rising sea of pollution affecting astronomical observations at all wavelengths, there is a clear qualitative difference between ground-based and space-based noise sources. The former are mostly local or regional in nature and must be primarily addressed at those levels. The new IAU Working Group on Reducing Light Pollution, under the vigorous Chairmanship of Malcolm Smith, Director of the AURA Observatories in Chile, is working very effectively on these issues in collaboration with astronomers, lighting engineers, local and national authorities, educators, and the media in several countries.

In contrast, the environmental impact of space missions on astronomy are global, both in cause and effect: Spacecraft causing harmful interference with optical or radio astronomy may be launched by agencies or private enterprises anywhere and affect a whole hemisphere at a time. The international forum where governments meet to negotiate "traffic rules" in space is the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), where the IAU is a Permanent Observer. Especially up to the huge 1999 conference UNISPACE III in Vienna, where we organised IAU Symposium 196, "Preserving the Astronomical Sky", the IAU has been actively exploiting this platform, and many useful recommendations for future UN policies in space were eventually made by UNISPACE III and later endorsed by the UN General Assembly. The IAU is now working with a number of interested countries

and agencies to formulate more specific proposals for regulations, based on these general recommendations.

At the same time, contacts with especially COSPAR and the UN Office for Outer Space Affairs led to initiatives which, in the longer term, could lead to a more systematic IAU programme to support science education at several levels in (primarily) developing countries. With luck, also a broader base of support for these programmes and improved career prospects for the people trained might result. To facilitate this process, the IAU commission structure in the area has been reorganised (see above), and the budget for 2001-2003 provides better funding and flexibility for these activities. But it is the hard work of enthusiastic volunteers like Don Wentzel, Michèle Gerbaldi, and many others that makes these programmes successful in the end.

Near Earth Objects (primarily minor planets) came into unexpected but probably permanent prominence during the period, receiving much attention from both authorities, the public, and the press. The Executive Committee reacted to this development by formulating an official policy on NEOs, including an open information policy and an offer of prompt IAU peer review of any claimed impact prediction. The IAU also co-sponsored the IMPACT Workshop in Torino in 1999, which reviewed a wide range of issues related to NEOs. In anticipation of the probable large upturn in NEO research in the near future, the tasks, responsibilities, and high-level policies of the IAU Minor Planet Center have finally been formally defined and approved. It is gratifying that the just-released report of a high-level UK Task Force on NEO research recommends a continued central role for the IAU in this field.

Finally, as a last-minute development before the GA, the IAU and the Peter Gruber Foundation agreed to collaborate on the award of the "Cosmology Prize" created this year by the Foundation. Beginning in 2001, calls for nominations for this 150,000 annual award will be distributed by the IAU, which will also nominate members of the Board selecting the winners. Moreover, the Foundation will provide 75,000 every three years to the IAU towards fellowships for promising young astronomers in any field. The presentation of the Prize and Fellowships should add a new touch of festivity to future IAU General Assemblies and hopefully enhance both public visibility and the recruitment of new blood for our science in coming years.

Johannes Andersen

THE EAS AFFILIATED SOCIETIES

ASTRONOMISCHE GESELLSCHAFT

The “Astronomische Gesellschaft” (Astronomical Society), who is jointly with EAS hosting the next JENAM-2001 in Munich, Germany, reflects in its history the difficult and troublesome history of the country, from which nowadays many of its members originate: Germany. Its first foundation took place as early as in September 1800 in the small village of Lilienthal, near Bremen, Germany. Here six astronomers, among them famous Heinrich W.M. Olbers (Olbers’s Paradoxon) and Friedrich Bessel assembled the “Vereinigte Astronomische Gesellschaft” (United Astronomical Society), and included 24 European astronomers in something called “heavenly police” (“Himmelspolizey”) to look out for a new planet between Mars and Jupiter. Piazzi, from Palermo, Italy, who detected the minor planet Ceres, was among those 24. Being associated with revolutionary France (to which the city of Bremen was linked in 1800), the first “Astronomische Gesellschaft” faded out later and lacked any institutional support during the time of the post-napoleonic restauration.

Present day “Astronomische Gesellschaft” (AG) dates its origins back to the second foundation in Heidelberg, in 1863. It was founded as an international society dedicated to the ‘advancement of science by supporting projects which require systematic cooperation of many people’. Important joint tasks were, for example, the publication of the Catalogue of the Astronomical Society (AG-Katalog), featuring the position of all stars in the northern hemisphere up to the ninth magnitude and of the ‘History and literature of brightness variation of variable stars’ (‘Geschichte und Literatur des Lichtwechsels der Veränderlichen Sterne’). Already very early other astronomical and astrophysical subjects have been discussed, scientific aims and results have been presented, and worldwide contacts have been made at the regular meetings.

Before World War I more than 400 members from all over the world united on the initiative of the Astronomische Gesellschaft. In the 1920s and 1930s the global tasks were increasingly transferred to the International Astronomical Union. World War II caused the Astronomische Gesellschaft to suspend its activities. The society was re-established in 1947 in Göttingen. In the late 1960s, members in what was then the German Democratic Republic were forced to resign membership of the AG, however, in March 1990, arrangements were made for new admission and re-admission. Today, the Astronomische Gesellschaft has more than 800 mem-

bers.

The Astronomische Gesellschaft is recognized as an affiliated society with the European Astronomical Society since September 1995. A large fraction of its members originate from Germany, Austria, and the German speaking part of Switzerland, but due to the history the society still considers itself as open for members from any country and language.

Every year in autumn the society has its general assembly connected with its Annual International Scientific Meeting (scientific language of conference is English). Current year’s topic was “Dynamic Stability and Instabilities in the Universe”, held this September in Bremen, to celebrate the 200th anniversary of the first foundation of AG.

During the annual autumn meetings the Karl-Schwarzschild prize and medal is awarded to an outstanding astronomer; the award is connected with an invitation to deliver the opening lecture (Karl-Schwarzschild lecture) of the meeting. The first Schwarzschild prize was awarded to S. Chandrasekhar in 1986, the recent one of the year 2000 to Sir Roger Penrose. Also the Ludwig-Biermann award is given to an outstanding younger astronomer every year.

The Astronomische Gesellschaft publishes the annual “Reviews of Modern Astronomy” (Springer-Verlag), containing reviews and highlights, including the Schwarzschild lecture of the annual meetings, the “Astronomische Gesellschaft Abstract Series” (indexed in ADS, abstracts of short papers for annual meetings), and (in German) the “Mitteilungen” (Annual Reports of Institutes and Observatories of Austria, Germany, and partly of Switzerland).

For more information please refer to: (in English):
<http://www.astro.uni-jena.de/Astron-Ges/ag0homee.html>

Reiner Spurzem

A LETTER

Dear all,

I looked at the summary of the last forum in the EAS web page and I found the information listed there very valuable, covering most of my own questions. However I still have a few questions/suggestions to make. Firstly, I would like to know you if there exists a list of PhD studentships, post-doc positions or lectureships available

in European Institutes. It would be very useful if all the Universities and the various research institutes in Europe advertised their positions in a place everybody could look at. I know that such a site exists in the AAS web page but it involves mainly positions available in USA. I wonder if there is a possibility such a site to be created for Europe or if it already exists.

I also noticed that quite a lot of my fellow students, including myself, do not know much about the research that is carried out in various institutes/Universities in Europe. It would be very useful if we had a list where researchers advertise their research interests. That way one could contact them if one had any queries regarding their research. Furthermore, one would have the opportunity to find out information about places that one would like to work in the future.

In the previous forum, I noticed in the comments of the senior astronomers that it's important for a post-doc candidate to have publications in journals so that the other people could judge his/her work. I also think that participating and presenting your work in conferences/meetings/seminars is equally important. Hence, I think it is a good idea that EAS encourage more PhD students and post-docs to give talks in institutes/universities other than their home institute.

Thank you very much for your time,

Alexandra Fassia

ANNOUNCEMENTS

Kluwer has been announcing the publication of *StarGuides* 2001 and *StarBriefs* 2001, due to be out some time in Fall 2000. *StarGuides* is a directory of astronomy/space-related organizations (about 6200 entries) and is the paper version of the web resource *StarWorlds*. *StarBriefs* is a dictionary of astronomy/space related acronyms, abbreviations and symbols (about 145,000 entries) and is the paper version of the web resource *StarBits*.

Details are available from *starpages* and from secondary links. The paper versions have been around since 1978. They were initially published privately and were subse-

quently distributed by CDS. The 2001 editions are the first ones in the hands of a commercial publisher.

More importantly, the web resources above (*StarWorlds* and *StarBits*) remain reachable free of charge as previously at CDS and at its mirror sites with the additional advantage of being permanently updated. This is likely a 'premiere' for a commercial publisher to accept independent electronic versions remain freely accessible and people involved have to be commended for their understanding of synergetic and diversified publishing.

The electronic site is completed by a third resource, *StarHeads*, a database of personal web pages of astronomers and related scientists (currently about 5500 entries). NASA's (ADS) is pointing directly to that resource. Astronomers who would have a personal homepage not yet registered in *StarHeads* are of course invited to let it know for inclusion.

StarPages: <http://vizier.u-strasbg.fr/starpages.html>

StarWorlds: <http://vizier.u-strasbg.fr/starworlds.html>

StarHeads: <http://vizier.u-strasbg.fr/starheads.html>

StarBits: <http://vizier.u-strasbg.fr/starbits.html>

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