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MESSAGE FROM THE PRESIDENT

This year our 8th JENAM took place in Toulouse, where we were welcomed by the French Astronomical Society (Société Française d'Astronomie et d'Astrophysique). It gathered over 300 participants from all over Europe, who thoroughly enjoyed their stay in 'la ville rose' - as the French call it. We would have been certainly more numerous if all those who wished to come had found the means to finance their trip. This makes us aware again of the great difficulties encountered by many colleagues from Eastern Europe, not only to travel abroad, but to carry on their research, and even everyday's life.

At the opening ceremony we were greeted by the mayor of Toulouse, Dominique Baudis, who stressed the interest of his city for the development of research, particularly in astrophysics and space science. The director of the branch 'Sciences de l'Univers' of the Centre National de la Recherche Scientifique, Jean-Francois Minster, insisted on the importance of European collaboration and strategic planning. The evening at the Cité de l'Espace reminded us that Toulouse is the seat of the french aerospace industry. But the highest moment of the social programme was clearly the excursion to nearby Gers, where we were offered a delicious banquet by the local authorities, in the market hall of medieval Fleurance.

The goal of the organisers was to improve even further the level of the parallel sessions, and they reached it: indeed these meetings can now claim the status of genuine colloquia, and they will publish their proceedings. One of the parallel sessions was actually a workshop of the European Star and Planet Formation Network (ES-FON), and another was held in common with the TAUP meeting of particle physicists. The plenary conferences highlighted recent advances in various fields, from cosmological neutrinos to extra-solar planets: we had even the privilege to learn the discovery of yet another of

these exoplanets.

We owe the success of this JENAM to the imagination and the efforts of the Local Organising Committee, which was headed by Prof. Sylvie Vauclair; to her, to her collaborators, to all who made this meeting possible, I express again our warm thanks.

The next JENAM will take place in Moscow, jointly with the 5th Conference of the Euro-Asian Astronomical Society. We shall meet much earlier in the year, from May 29 to June 3, to avoid a too close proximity with the IAU General Assembly in Manchester. A short version of the first announcement is included in this Newsletter; more details concerning the programme may be found on the web sites <http://www.sai.msu.su/jenam/> or <http://www.iap.fr/eas/>. This JENAM'2000 looks very promising, and I am sure that many of you will respond to the invitation of our Russian colleagues.

Finally, I wish to thank those of you who generously contributed to the emergency fund which was opened to help the families of the victims of the cablecar accident at Plateau de Bure. Over 300,000 francs have been collected and are being distributed to the families under the guidance of social workers.

Jean-Paul Zahn

EDITORIAL

Another issue is ready to appear. It happens to be a specific time when all the westernised world has decided to celebrate the year 2000. All astronomers know that the year 2000 does not really mean anything either in physics nor in proper time measuring. However since psychologically we are prepared to celebrate, we decided to provide a special section "*on time*". I would therefore like to express my sincere thanks to the authors of this anniversary part of our Newsletter for sending their contribution so eagerly and on time!!

The JENAM-99 in Toulouse was a great success and you will find reports from the parallel sessions. Those who did not participate have missed the hospitality of southern France and the warm atmosphere of the meeting. We thank all the organisers heartfully.

You will also find some reports from other meetings and the usual messages. The preregistration form for the JENAM 2000 is also inserted and it seems quite a rich one in parallel sessions and joint discussions. I hope

many people will be there from all parts of Europe giving an opportunity to discuss a lot of interesting scientific and strategic topics.

My apology is addressed to the young astronomers in Europe. We did not forget our promise. It is just very difficult to organise the program of a central data bank of information for EAS. We are hoping that the various problems will be faced and not very long we will have good news.

Last but by no means least I would like to express publicly my sympathy to E. Thomas for the loss of her husband and thank her again for the effort to be so efficient with us inspite the difficult times she had.

Mary Kontizas

MESSAGE FROM THE TREASURER

EAS Travel Grants to JENAM Meetings

Now that the very successful JENAM-99 meeting in Toulouse is over, we have started to plan for the meeting in 2000. As is announced elsewhere in this Newsletter, it will take place in Moscow in May/June. Of course, the most important part of the plan is the scientific content, but many of us also think about the financial implications i.e. travel money.

Also for JENAM-2000 the EAS council has decided to give a number of travel grants. These are intended for young astronomers and we believe that it is very important to give the opportunity to young people to travel and present their work abroad as well as to make contacts with colleagues in foreign countries.

Most of the EAS members have already paid their dues for 1999, and several have included a voluntary donation for which we are very grateful. However, it is not too late to consider an additional contribution to our "Travel Fund" and I would like to urge the readers of the Newsletter to help us.

I know that for many of our members, even paying the membership fee is a struggle, but others are more privileged.

Donations in Swiss Francs (CHF) can be sent by bank transfer to:
UBS, POB 1518
CH-8700 Kuesnacht
Switzerland
Account nr: 259-Q1722058.0

We also gladly accept payment by credit card (Mastercard, Visa). Please cut out and send the form below by FAX (+41 - 22 793 13 17) or ordinary mail (EAS, P.O. Box 82, CH-1213 Petit-Lancy 2, Switzerland).

Birgitta Nordstrom

Donation to "EAS Travel Fund"

Name: _____

Address: _____

Type of card: Mastercard/Eurocard Visa

Name of card holder: _____

Card number (16 digits): _____

Expiration date: _____

I wish to donate the sum of _____ CHF to the EAS Travel Fund

Signature:

REPORTS FROM MEETINGS

JENAM-99

Dynamical Studies of Star Clusters and Galaxies

Our Session was a very interesting and fruitful exchange of informations and new work done by the participants, first on Galaxy Dynamics, where new simulations were presented, in particular with a new concept of parallel machines. Many efforts were presented about interpreting locally the orbits in our own Milky Way, spiral arms, and stellar halo. Barred galaxies and also cusps due to supermassive black holes were the object of studies.

A second part was focussed on stellar clusters: dynamical and chemical evolution, new insight in gravothermal oscillations, mass segregation, binaries, and the effects of tides on globular clusters. All these subjects and properties were studied both through new observations, and from simulations with several methods and algorithms. About 50 people attended the session in aver-

age, and proceedings will be published.

Francoise Combes

Neutrinos in Astrophysics

The session on Neutrinos in Astrophysics is special, for it reported on research done by Astronomers and by Particle Physicists. It was organized together with TAUP99, dedicated to underground experiments, which was held during the same week at the College de France in Paris. The saturday session was common to both conferences. People flew from Paris to Toulouse on Friday afternoon. The plenary session was held in the morning with two talks: one, "What do we know experimentally about neutrinos ?" by Michel Spiro from Saclay was a general review on the experimental side in the research about neutrinos, the quest for their mass, and more generally, all experiments dealing with that subject. The other, "Big Bang Nucleosynthesis and Cosmological neutrinos" by Subir Sarkar, from Oxford University was a theoretical review on the primary neutrinos (the equivalent to the primary photons at 3 K) made by the big bang and have cooled down since. In the afternoon was held the parallel session with three talks:

1) Thomas Patzak from Tufts University spoke on Solar Neutrinos, which are indeed of considerable interes, for only half of the predicted flux is detected on earth. Are the Solar models wrong, or does the neutrino have a property, like oscillations which put them in a state where they cannot be measured?

2) Masayuki Nakahata from the Superkamiokande lab in Japan spoke about atmospheric neutrinos, which are produced in the decay of pions and muons from the interactions of cosmic protons with earth atmosphere. He showed the beautiful results which are evidence that muon neutrinos oscillate, hence have mass.

3) Fabrice Feinstein, from Marseille, spoke on Galactic neutrinos. He explained why very high energy neutrinos (equivalent to very large cosmic showers) can be detected. He made a review of the different projects, all of them being in the one kilometer cube size, one in the Antarctic ice, the others in the sea sater. A long dicussion followed that session which was considered as a sucess by the audience.

Philippe Gorodetzky

Problems in astrophysical fluid dynamics

The colloquium devoted to problems in astrophysical fluid dynamics gathered around 30 scientists and was divided in three sessions addressing the general tendencies of the subject.

The first session was devoted to the flows in stars or the sun and focused on mixing (F. Lignieres, P. Garaud) and oscillations (B. Dintrans) with a contribution on masers in turbulent layers (A. Sobolev). Poster presentations offered to the audience challenging problems in double stars dynamics (R. Galis or L.Hric).

The second session gathered topics on dynamos and MHD turbulence with presentations on experimental dynamo (J. Leorat), galactic dynamo (K. Ferriere), on an impressive numerical simulation of MHD turbulence with 512^3 resolution (W.-C. Muller) and a presentation of gas dynamics in clusters of galaxies (T. Toniazzo).

The third session was devoted to discs and jet dynamics with a focus on the formation of jets by accretion discs (A. Brandenburg, F.Casse or M. Tagger) and on processes of jet acceleration (A. Marcowith). A poster by W. Duschl presented a new estimate for turbulent viscosity in accretion discs.

Michel Rieutord

The Interplay Between Massive Stars and the ISM

The main topics covered in our session were the stellar content and physics of massive star-forming regions (giant HII regions, starbursts), chemical enrichment by massive stars, and the dynamical impact of star formation on the ISM from small to large scales. Through the presentations in the first part, we were guided from local star forming regions allowing the study of detailed physical processes to distant starburst galaxies as viewed through multi-wavelength observations including recent ISO results.

New results on the chemical evolution driven by massive stars were then presented. Last but not least questions regarding the dynamical interactions with the ISM (shells, SF trigger, mixing and dispersal of heavy elements) were discussed. The background of the participants reflected the variety of phenomena at play in this rich field of astrophysics. Many interesting new results were presented in our two day session hosting 24 oral presentations and 8 posters. Proceedings of our session will be published in *New Astronomy Reviews*.

Daniel Schaerer & Rosa Gonzalez Delgado

Star Formation

From Molecular Clouds to Young Stars

Understanding star formation from the small (e.g. Solar system) scale to the large scale (e.g. external galaxies) is a major challenge of astrophysical research to-

day. This field will greatly benefit from current and future large ground-based and space projects such as the VLT, XMM, FIRST, and ALMA, in which Europe is involved at the highest level. It was thus quite natural to have a parallel session dedicated to that topic as part of JENAM99. The session was attended by about 50 people and also served as a workshop of the recently created European Network on Star and Planet Formation (ESFON) (see <http://www.mpia-hd.mpg.de/MPIA/Projects/ESFON/>).

In 1.5 days, the workshop focused on three key aspects where significant theoretical and observational progress is currently being made by European groups:

1) the earliest stages of star formation and cloud collapse (e.g. A. Whitworth, R. Klessen, S. Moiseenko) and their relevance to the problem of the origin of the stellar initial mass function (IMF) (e.g. L. Testi, F. Motte);

2) the determination of the IMF with emphasis on the low-mass end (P. Kroupa), especially from recent surveys of young embedded stellar clusters with the mid-infrared camera ISOCAM aboard the ISO satellite (A. Kaas, S. Bontemps); and

3) the formation of planets in circumstellar disks around young stars and its close links with the star formation process itself (e.g. C. Terquem, A. Natta). Other aspects, such as the chemical evolution of protostellar clouds (B. Shustov), the angular momentum evolution of protostars (J. Ferreira, T. Montmerle), and the potential of optical interferometry (e.g. VLTI) for probing the inner (~ 1 AU) structure of accretion disks (F. Malbet), were also discussed more briefly.

Philippe André (CEA Saclay, France)

Very High Energy Astrophysics

The "Very High Energy Astrophysics" session was devoted to most recent observational and theoretical achievements in this field. In a first part, various present and future instruments have been presented, either space-born missions like AMS, GLAST and HETE or ground-based instruments like the Cerenkov telescopes CAT/CELESTE, HEGRA and HESSE, or the high energy cosmic-rays observatory AUGER. A second session gave an overview of most recent theories of particle acceleration, focusing on the difficult problem of acceleration by relativistic shocks or plasma waves and the origin of highest energy cosmic rays, which could be linked to gamma-ray bursts. The properties of high energy emission of AGNs were reviewed in a third ses-

sion, with a particular emphasis on variability and VHE emission. Another session included a review on gamma-ray bursts with the latest observational results on these fascinating phenomena and their possible mechanisms : neutron star or black hole merging, hypernovae, and the prospects for future observations and theoretical models. Finally the possible importance of non thermal processes in galactic objects was stressed in the last session.

Gilles Henri

Methods and Achievements of Asteroseismology

This session was devoted to the various techniques , recent results and prospectives for ground-based and space asteroseismology. The session was divided into 5 sub-sessions: the diagnostic power of asteroseismology ; asteroseismology from ground-based photometry; space-based photometry in Europe (followed by a special session with a detailed presentation of COROT) ; asteroseismology from ground-based spectroscopy ; general discussion. In addition a dozen posters on the various topics of this session were displayed during the whole JENAM Conference.

The session was attended by about 40 participants, except during the special COROT presentation, which attracted 100 people. During the general discussion that ended the session, the participants agreed on a declaration which was read at the EAS general assembly on Sept. 8. The text of this declaration, which provides a good summary of the session and of the discussion that ended it, is reproduced below.

C. Catala

SOLAR PHYSICS SECTION OF EAS AND EPS

Between September 12 – 18 the 9th European Meeting on solar physics *MAGNETIC FIELDS AND SOLAR PROCESSES* took place in Firenze, Italy, organized by the Solar Physics Section of the Joint Astrophysics Division of the EAS and EPS. At the same time a new board has been elected (see list at the end).

Solar Physics at the end of the millennium is a field of research in rapid development. The Sun is the only object in the universe in which all four forces of nature have now been observed at work directly. The Sun is also sufficiently nearby that the matter which it ejects into space in the form of a high-velocity wind has been observed in situ. Finally, it is the source of life on Earth which it controls by its light. More subtle ef-

fects (Solar-Terrestrial Physics and Space Weather) on the terrestrial magnetic environment are also linked to solar activity through the solar particles, the solar wind and its perturbations such as coronal mass ejections. It, therefore, comes as no surprise that Solar Physics has a large outreach towards other branches of science, and towards mankind in general.

The theme chosen for the 9th European Meeting on Solar Physics in Florence is a physical principle, the solar magnetic field. The work discussed at this Euroconference addresses the Sun outside its immediate core (≥ 0.2 solar radii) but well within the heliosphere ($\ll 100$ astronomical units). The programme was grouped around eleven key problems on which recent progress has been striking.

Highlights and Problems for the Future

- **Helioseismology.** The hope that the SOHO satellite would allow the study of gravity-modes, and reveal the inner core of the Sun has, unfortunately, not materialized. However, detailed observations of the pressure modes have allowed the determination of the internal rotation rate of the Sun to a high accuracy (relative differences in sound speed and density less than 0.5 %) between $0.2 - 0.6$ and $0.7 - 0.95 R_{\odot}$, and at various heliographic latitudes. At the base of the convection zone where, traditionally, the solar magnetic field is believed to be stored, a sharp peak in the sound speed has been observed. From the observations of traveling pressure wave packets it has been possible, for the first time, to perform tomographic imaging of emerging magnetic fields.
- **Waves.** A large variety of running and standing waves and oscillations have now been observed in the upper atmosphere and studied theoretically. The richness of the oscillatory modes in the solar atmosphere is primarily a result of the existence of strong inhomogeneities and non-uniformities created by, spatially intermittent, magnetic flux tubes, anchored below the photosphere. Important progress was presented on the development of nonlinear and shock waves, and on nonlinear coupling of various waves in flux tubes . It is hoped that these studies will eventually allow MHD spectroscopy of coronal structures in a fashion similar to helioseismology.
- **Solar prominences** are perhaps the most beautiful structures in the solar corona as seen by the ‘H $_{\alpha}$ eye’. Physically, they form a stepping stone in our understanding of the dynamics of the solar

atmosphere, as they are magnetically dominated structures at coronal levels while their evolution is governed by (sub)photospheric fluid motions at their footpoints. Observations show that the prominence gas is made up out of ever-changing fibrils or threads, of which the diameter may go down to 200 km, and with a filling factor down to 10^{-6} . A variety of wave modes has been observed, and can be used diagnostically. Recent MHD modelling of these fibrils in force free magnetic fields have considerably improved our understanding of the nature of the barbs and fibrils.

- **Coronal heating by explosive events** appears to be a natural result of the reshuffling of the solar magnetic ‘carpet’, arising from convective flows of magnetic flux tubes towards the network boundaries. Microscale heating has now been observed down to 10^{24} ergs per event. If the frequency distribution of such events continues with the same slope down to energies of $4 \cdot 10^{22}$ ergs the entire quiet corona could be heated by such explosions.
- **Solar flares.** Impressive results were presented both on 3D numerical modelling of magnetic explosions, and on new analytical developments regarding quasi-separatrix layers which plays an important role in the flare phenomenon. There are many observations performed at X-ray wavelengths which suggest that magnetic reconnection plays an important role in the flare energy release. On the observational/modelling front the relation between the locations of X-ray sources in and above flare loops and the site of reconnection has become clarified.
- **Particle acceleration** has been a long-standing problem in solar physics. Here, the key question is how a large fraction of the available energy in a solar flare is fed into particle acceleration. Sub-second timing studies and time-of-flight delay measurements in radio and hard X-ray emission show that particle acceleration in a flare is probably the result of acceleration by low-frequency MHD waves, excited by nonsteady reconnections and distributed over a volume larger than the actual reconnection sites, possibly in combination with direct electric field acceleration at the reconnection sites. Detailed numerical work on direct electric field acceleration in a configuration of changing magnetic islands now allows direct comparison between the observed and synthesized energy spectrum of the particles. Strong particle acceleration associated with CMEs appears to be

caused not by the bow shock but rather in disturbed regions downstream.

- **Coronal Mass Ejections and Space Weather** has developed into a mature subject since the advent of SOHO. Dynamic 3D MHD modelling of CMEs allows for the reproduction of white light structures and dimmings in X-rays. It is now understood that pressure variations in the solar wind excite compressional oscillations of the Earth’s magnetosphere while changes in the Interplanetary Magnetic Field cause reconnections in the terrestrial field and non-recurrent magnetic storms.
- **Solar wind and the heliosphere.** The solar wind consists of slow/dense and fast/dilute streams, originating respectively in closed magnetic structures and in coronal holes. It now appears that the fast solar wind is simply the result of heating in open field regions, often in the form of explosive events. The open field structure anchored in a dense gas acts as a thermodynamic machine which converts the heating, largely adiabatically, into convective losses. On the other hand, heating in closed magnetic structures at a relatively large gas pressure can lead to a slow and dense wind. Satellite observations with Ulysses have demonstrated the existence of large amplitude magnetic field fluctuations near the poles, creating field reversals in the wind.

In recent years, the European solar community has diversified considerably because of the great number of physical and astronomical methods involved, while at the same time a coherent picture of solar physics from deep inside the Sun to large distances is gradually emerging. It is, therefore, of utmost importance – and at the same time feasible – that a conscious effort is made to strengthen the coherence of the community and its interdisciplinary links. In this respect, the Solar Physics Section (of the Joint Astrophysics Division (M. Huber, chair) of the EPS and the EAS) can play an essential role, and it is a pleasure to see that two important solar European organizations, JOSO and CESRA, have brought their expertise into SPS, without losing any of their impetus; on the contrary, the close contacts with the rest of solar physics have a mutually stimulating effect!

It is gratifying to see the high quality of the work presented at the conference in terms of innovative ideas, numerical and analytical breakthroughs, and originality of instrumental designs, despite the relative modest

level of funding when compared to the US. To put it simply, the scientific return per euro spent in solar physics is high!

Jan Kuijpers, president SPS
Nicole Vilmer, secretary SPS

THE NEUTRON STAR - BLACK HOLE CONNECTION
A NATO Advanced Study Institute
Elounda, Crete, June 1999

Neutron stars and black holes have been at the forefront of astrophysics for over thirty years. As recently as ten years ago it was still being debated whether galactic stellar-mass black holes existed or not. It is now generally accepted that many (possibly a thousand) stellar-mass black holes most of them still undetected lie in low mass X-ray binary (LMXB) systems; a few of them are detected every year as X-ray or gamma-ray transients.

These objects are more massive than $3 M_{\odot}$, the maximum possible mass for a neutronstar, and show none of the tell-tale signs of neutron stars, such as X-ray bursts and X-ray pulsations. It is quite remarkable that all LMXBs display a similar temporal and spectral behaviour, independently of whether the accreting compact object is a neutron star or a black hole. A broad debate on these similarities and differences naturally constituted one of the main focal points during the Elounda meeting.

Evidence on these aspects has been forthcoming from the Compton Gamma-ray Observatory (CGRO), the ROSAT and ASCA satellites, the Rossi X-Ray Timing Explorer (RXTE), and from the Beppo-SAX Observatory. Several reports zeroed in onto the very rich phenomenology of the transient X-ray source GRS 1915+105, a black hole, also found to be a microquasar expelling superluminal plasma jets at regular intervals. This source also displays an interesting pattern of fast spectral and time variations, and has been singled out as a unique prototype for the study of accretion-disk instabilities, possibly at work in other accreting black holes. An observing run of this source with RXTE was actually taking place while the meeting was in progress, and a direct internet connection to the experiment enabled observer Tomaso Belloni to obtain the latest light curves and variability patterns.

There are indications that we are seeing emission from very close to the black hole event horizon, possibly at the location of the last stable orbit, and excitement over the possibility of observing direct manifestations of gen-

eral relativity in this and related objects is quite strong.

Predictably, the mysterious gamma ray bursts (GRB), and the recently discovered magnetars added two more important focal points to the Elounda meeting. Recent success in following up GRB afterglows has led to identifications relating these most powerful explosions to faint galaxies at cosmological distances. It is theorised that these events could be the result of catastrophic mergers of neutron star binaries, or neutron star - black hole binaries. Mechanisms leading to such gigantic coalescence events were reviewed at the meeting. GRBs are thought to be catastrophic, one-time-only events, resulting in the total disruption of the initial system.

Contrary to these, the distinct class of the so called soft gamma repeaters (SGRs), numbering only four sources located in our Galaxy and in the nearby Large Magellanic Cloud, do recur in sporadic eruptions displaying very soft gamma ray spectra. These objects have been linked to magnetic neutron stars with rather long, 5 to 10 second spin periods, and are typically linked to 10^4 year old supernova remnants. Their long spin periods along with their measured rates of spin decay point to ultra-strong magnetic fields of the order of 10^{15} Gauss. Are these objects related to another class of low luminosity - long period X-ray pulsars, known as anomalous X-ray pulsars? This is still a point of detailed investigation and debate involving theory and observation.

These, and a multitude of related issues were reviewed, analysed, and debated in Elounda: Can magnetospheric beat frequency models explain some of the neutron star QPOs? QPOs were recently detected during thermonuclear X-ray burst events in accreting neutron stars. Do these quasiperiodicities relate to the propagation velocity of burning fronts as they move across the neutron star's surface? How is one to interpret the evident similarities of accreting neutron stars and black holes in low mass X-ray binaries? Do NS magnetic fields evolve? Do we see the surface thermal emission of isolated neutron stars? Do we observe all the neutron stars predicted by the current counts of supernova events in our Galaxy? Which evolutionary scenarios give rise to NS and BH binary systems? Could a sub-class of GRBs be due to the catastrophic release of the rotational energy of the neutron star in some odd, accreting low mass X-ray binaries in distant galaxies?

All these debates certainly serve in refocussing the observing strategies to be followed with the new and powerful Chandra and XMM observatories awaiting launch within this summer. The Elounda meeting has thus offered an excellent opportunity for reviewing the capa-

bilities of these and other coming space-borne missions.

Chryssa Kouveliotou, Jan van Paradijs,
Joseph Ventura

THE EAS AFFILIATED SOCIETIES

EURO-ASIAN ASTRONOMICAL SOCIETY

The history of Astronomical societies in Russia goes as far back as 1888 when the Circle of Amateur Astronomers of Nizhnii Novgorod started its activity. The Russian Astronomical Society, an organization for professional astronomers, was founded in 1890. These two as well as other astronomical societies were dissolved in early 1930-ies. The necessity for a society of professional astronomers has been debated at least since 1970s. The right moment came with the first wave of democratic reforms in the late 1980s.

The Euro-Asian Astronomical Society (EAAS) was founded in April, 1990 under the name “Soviet Astronomical Society” as a non-governmental, non-profit, and non-political organization for professional astronomers of the Soviet Union. The principal goals of the Society were and continue to be: 1) assisting the development of astronomy on the territory of the country (now CIS and Baltia) and worldwide, and 2) transfer the interests of the astronomical community to the notice of governmental structures.

Individual membership is the basis of the EAAS. It is open to individuals worldwide with 800 astronomers from 32 countries of all continents except Africa (including all the 13 new independent states (NIS) on the territory of the Former Soviet Union (FSU) - CIS and Baltia.

Russia	more than 500
Ukraine	about 100
USA	about 25
Kazakhstan	about 20
Uzbekistan	about 20
Armenia	about 12
Azerbaijan	about 10
Georgia	9
Tajikistan	7
Turkmenistan	7
Bulgaria	6
Estonia	6
Israel	6
Latvija	6

A number of members from the USA as well as from European and other countries are former Soviet astronomers, however, most of members outside FSU (about 4/5) are native ones and mainly distinguished scientists.

Since 1992, the Society bears the name of “Euro-Asian Astronomical Society” (EAAS). Sweeping changes in legislation made it necessary to officially register EAAS three times within nine years of its existence (the last time in Sep. 1999).

Some of the national and local astronomical societies founded and registered in different countries and/or cities (e.g. Tajikistan, Odessa, Alma-Ata in the FSU and FYROM outside it) have joined EAAS as affiliated societies. EAAS representation in Latvia has been registered recently. Nine non-profit societies (typically without official registration - Russian legislation permits it) are associated with EAAS, such as associations of planetaria; high-school teachers of astronomy; lecturers of astronomy in educational universities editorial board of the “Zvezdochet” (Stargazer) magazine for amateur astronomers, as well as a number of amateur groups (up to about 200 members per group).

EAAS is affiliated to the Russian Physical Society, EAS, and American Association for Advancement of Science (AAAS). It is a cofounder of the Russian Union of Scientific Societies and the Physical Society of Russian Federation.

EAAS activities are directed by the Council Board (currently 27 persons) headed by 3 co-chairpersons. These two bodies are elected every 3 years during EAAS General Assemblies.

An important role of the Society is to fight for the survival and development of astronomy in the NIS as a whole and in individual institutes in particular, cooperating with institutions of the national Academies of Science, Ministries of Science and Education, etc. and permanently monitoring the situation in astronomy and astronomical education at the professional, school, and public levels in all FSU countries.

EAAS, together with affiliated bodies and in cooperation with other organizations, sponsors six periodic and occasional publications including

- the scientific refereed journal “Astronomical and Astrophysical Transactions” (in English, 70 issues have been published since 1991);
- “Solar Data” (1994-96) and “Astron. Tsirkular” (publication resumed in 1999);
- the Society’s Bulletin (1990-95), and, more recently,

(since 1996) the electronic newsletter “Astrocourier” (in Russian, with occasional sections in English);
- the popular-science almanac “Universe and Ourselves” (in Russian, digests in English, 4 issues since 1993);
- the popular “Zvezdochet” (“Stargazer”) magazine (in Russian since 1994, 12 issues per year),
- the Bulletin of the Association of Planetaria of Russia, since 1995 (one to two issues per year).

EAAS and its affiliated members, in cooperation with other institutions, hold about 10 different size conferences every year. The largest was the IV EAAS General Assembly (Moscow, Nov. 1997): during 11 days 360 persons participated in 3 associated colloquia and GA which included plenary sessions, 9 parallel sections, one joint discussion, and business meetings. 300 participants contributed to the VII Symposium on Solar-Terrestrial Physics (Pakhra, Moscow region, Oct. 1998). Examples of smaller events are annual conference of planetaria lecturers (50-100 participants), meetings of high-school teachers of astronomy (several dozen persons) associated with annual spring Olympics and autumn schools for school students held by the EAAS commission on astronomical education. Since 1995, EAAS helps to hold the annual (XXVIIIth in 1999) winter conference for students of astronomical departments of universities (Kourovskaya observatory of Ural state university (Ekaterinburg)). The largest scientific meeting held by the EAAS in 1999 was the 2nd G.A.Gamow memorial international conference (Odessa (Ukraine), Aug. 16-22 and St. Peterburg, Aug. 23-27), with more than 200 participants.

In 1992, when funding for science collapsed, EAAS worked out the program “Survival of Astronomy in Russia”. The Program got the approval and financial support of the Russian Ministry of Science. Thirty-six astronomical teams received grants. As a result, several research programs in astronomy in Russia and FSU were able to continue. Later, owing to joint efforts of the Russian Academy of Sciences (RAS) and the EAAS, the Russian State, Science and Technology Program, named “Astronomy” was founded and later was included as into the governmental program “Priority areas of science and technology in Russia”.

With another grant, obtained by EAAS in 1995 from the Russian Ministry of Science, the Abastumani Astronomical Observatory (Georgia), its city laboratory in Tbilisi, and Byurakan Observatory (Armenia) were supplied with PCs of Notebook-type which allowed the data processing and other work not to be stopped during the periods of blackouts that used to happen there in mid 1990s.

Since 1993, the EAAS carries on a library program aimed at supplying astronomical institutions in CIS, Baltic states, Bulgaria (during two years), and Yugoslavia (since 1997) with Russian-language astronomical journals, popular magazines and other printed matter as well as with “Astronomical and Astrophysical Transactions”. EAAS efforts allowed all FSU astronomical institutions to be granted three-years-long free-of-charge access to the electronic version of ApJ and a number of other AAS periodicals.

In 1992-96, EAAS obtained grants for fabrication of astronomical photographic plates, that were of high quality and were used by a large number of astronomical observatories and institutions of Russia, several other NIS countries, and Latvia.

The EAAS Commission on Astronomical Education supports annual Olympics in astronomy for School students in Moscow city (Russian and International ones) with participants, in different years, from NIS, West Europe, India, Brazil (<http://www.issp.ac.ru/univer/>).

The same Commission has succeeded that a new version of the textbook in astronomy for secondary schools was published and several new versions of programs in astronomy for secondary school were included in the list of programs recommended by the Russian Ministry of Education.

EAAS pays much attention to *popularization of astronomy*. Since 1995 an astronomical evening school patronized by EAAS was added to Moscow University evening classes for school students. The school provides basic knowledge in astronomy to secondary and high-school children. Periodic astronomical performances are prepared by EAAS local branches for local TV (the best ones being those in Odessa, Ukraine). EAAS press secretary regularly promotes astronomical topics and news into widely-read federal and local newspapers and magazines (about 70 publications during 1993-99).

EAAS and its affiliated member: *the Russian Association of Planetaria* (an international association after several planetaria from Ukraine and Belorussia have joined it) continue their long struggle for planetaria surviving: the major part of them being housed in churches, run the risk of just getting closed, if the buildings are given back to the Church. 26 planetaria are still working. The oldest and the best, Moscow planetarium, housed in a big specialized building in the central part of Moscow and closed for 4 years now, is threatened by gambling business: EAAS continues to fight, at the level of the highest authorities of Moscow, for its survival.

EAAS carries out its activities in some other fields (see *References*, where more details on the topics mentioned above can be found).

References

1. N.G. Bochkarev About the Euro-Asian Astronomical Society. *Astron. Astrophys. Transactions*, v. 14, p. 149-163, 1997
2. Report of EAAS Council Board to the IVth General Assembly (in Russian), 48 pp., 1997.

For membership please e-mail <boch@sai.msu.ru>.

N.G. Bochkarev & V.N. Obridko,
EAAS co-chairmen

ANNOUNCEMENTS

EAS DIRECTORY UPDATE

Dear Colleagues,

With the development of the electronic communications, which helps the EAS to speed-up substantially communications with its members, it appeared also that many e-mail addresses were obsolete in our directory. It is therefore time for us to do a major update of our list, and we ask for everybody's help to do this.

The simplest way for you is to connect to the Directory via our Web page. Please connect to: <http://www.iap.fr/eas/directory.html> and follow the instructions. To modify your own data, you need FIRST a password which you have to require through this Web page and which will be sent to you directly (if later, you have forgotten it, simply ask again). Once you have your password, you can correct your own data (address, e-mail, etc...) directly in the database. Note that if you have already received EAS e-mails in the last months, this means that your e-mail address is a-priori correct and does not require modifications. In the opposite case, please connect yourself and check your data. Only ONE address is allowed!

For those of you who have no easy Web access (and have not yet received e-mails from the EAS in the recent past), please send your e-mail address (and other relevant data) directly to our Secretary in Geneva: edith.thomas@epletters.ch In order not to overload the secretary with work, we ask you to use this channel only if you really have no other way to access our Web page.

We hope that this service will help the development of

our association and thank you very much for your collaboration.

Michel Dennefeld (Webmaster)

FUTURE MEETINGS

THE EVOLUTION OF GALAXIES. I OBSERVATIONAL CLUES.

This is the first announcement of a series of three Euroconferences on the Evolution of Galaxies. It will take place in Granada (Spain) and will address the key observations needed for a decisive progress in the understanding of galaxy evolution. Specialists in various fields of astronomy, observers and theoreticians are expected to participate.

If interested, please fill in and submit the pre-registration form, to be found in our web site <http://www.iaa.es/~euroconf>

The second announcement will be e-mailed directly to those who have pre-registered. Information about future Euroconferences of this series will be available from the web site

<http://www.daec.obspm.fr/ThreeConf.html>

Jose M. Vilchez

NATO ADVANCED STUDY INSTITUTE ON SPACE STORMS AND SPACE WEATHER HAZARDS

June 19-29, 2000, Crete, Greece

The aims of this NATO Advanced Study Institute are:

- (a) to provide a systematic overview and rigorous introduction to the physics of space magnetic storms
- (b) to review recent spacecraft measurements that have provided new insight into the dynamics and effects of space storms
- (c) to review space weather hazards associated with space storms and pertinent to the operation of technological systems in space and on ground
- (d) to discuss and assess methods of space weather forecasting.

Attendance: The ASI will accommodate young scientists (postdocs and graduate students) and senior scientists, as lecturers and invited seminar speakers. Attendance will be limited to a maximum of 80 participants, who will be selected on the basis of their qualification and potential contribution to the meeting. For more in-

formation please contact via e-mail Dr. A. Anastasiadis (anastasi@creator.space.noa.gr), or link to the web site: <http://sat2.space.noa.gr/~daglis/asi2000.html>

Applications should arrive not later than 31 January 2000.

THE NEON OBSERVING SCHOOL

The Network of European Observatories in the North (NEON) organises a yearly observational Euro summer school sponsored by the European Community.

The participating observatories are: Asiago Observatory (Italy); Calar Alto Observatory (Germany-Spain) and Haute-Provence Observatory (France), with additional tutorial assistance from ESO.

The purpose of the school is to provide opportunity to gain practical observational experience at the telescope, in observatories with state of the art instrumentation. To this effect, the school proposes tutorial observations in small groups of 3 students, under the guidance of an experienced observer, centered around a small research project and going through all steps of a standard observing program. Some complementary lectures will be given by experts in the field.

The school is open to students working on a PhD thesis in Astronomy and who are nationals of a Member State or an Associated State of the European Union. The working language is English. Up to eighteen participants will be selected by the organising committee and will have their travel and living expenses paid, if they satisfy the EC rules (age limit of 35 years at the time of the Euro Summer School).

Full practical details and instructions on how to apply for the first school (July 2000, in Calar Alto) will be found in due time (before the end of the year, for a pre-vious application deadline of March 31st, 2000) on the EAS Web site at: <http://www.iap.fr/eas/schools.html>

Michel Dennefeld, Co-ordinator of the NEON school

NATO ADVANCED STUDY INSTITUTE ON THE RESTLESS UNIVERSE

Applications of Gravitational N-Body Dynamics to Planetary, Stellar and Galactic Systems

54th Scottish Universities Summer School in Physics

Atholl Arms Hotel - Blair Atholl,
Scotland

23 July - 5 August, 2000

www.astro.gla.ac.uk/users/martin/nato/natoconf.html

The above ASI is the latest in the CORTINA Series of ASIs on Celestial Mechanics and Astro-Dynamics. It will be held at the Atholl Arms Hotel, Blair Atholl, Scotland from July 23 to August 5, 2000, involving 10 working days. It is scheduled just before the International Astronomical Union (IAU) general assembly being held in Manchester, UK, 7 August to 19 August.

Motivation for the "Restless Universe"

The gravitational N-body problem dominates much of theoretical astrophysics. It arises in problems ranging from the motion of artificial and natural satellites in the Solar System, to the formation and evolution of large-scale structure in the Universe. On intermediate scales the N-body dynamics of gravitational systems dominates the behaviour of stars in clusters and galaxies. AIM The aim of the 'The Restless Universe' is to stimulate the cross-fertilisation of ideas, methods and applications between the different communities who work in the gravitational N-body problem, across diverse fields of astrophysics. The lectures and topics of the Institute will cover three broad themes: the dynamics of the solar system, the dynamics of galaxies and star clusters, and the large scale structure of the Universe.

Organising Committee

Co-Directors - Dr Bonnie Steves and Prof. Andrzej Maciejewski Local - Prof. Archie Roy, Dr Martin Hendry, Prof. Douglas Hogg International - Prof. Claude Froeschl and Prof. Andrea Milani

You may apply via email or regular mail or fax. Our contact details are given below. Application before **January 31, 2000** is strongly recommended as *the number of participants will be limited to about 80*.

If you have any queries please feel free to contact us at:

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PASSED AWAY ...

It is with great sadness that we report the untimely death of Dr. Jan van Paradijs a distinguished member of EAS. A well known high energy astrophysicist who last January was honored with the Bruno Rossi Prize for his co-discovery of the X-ray and optical afterglow of gamma-ray bursts. He will be missed a lot. We address our deep sympathy to his widow Dr. Chryssa Kouveliotou who is also member of EAS.

European Astronomical Society

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