



EUROPEAN ASTRONOMICAL SOCIETY **NEWSLETTER**

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CONTENTS

<i>EDITORIAL</i>	1
<i>MESSAGE FROM THE PRESIDENT</i>	1
NEWS	
1. FROM THE EAS COUNCIL	2
2. EAS, AFFILIATED SOCIETIES, AND EWASS MEETINGS	3
3. EWASS 2013	3
4. THE 2012 EAS PRIZES	3
5. EAS ANNOUNCES THE MERAC PRIZES	4
6. THE 2012 GROTE REBER MEDAL	5
7. FRANCO PACINI (1939-2012)	5

EDITORIAL

As is typically the case over the past few years the summer newsletter will reach all EAS members just before the 2012 European Week of Astronomy and Space Science (EWASS) commences its activities in the Eternal City (Rome, Italy). The program of the meeting is full of exciting symposia and many focused special sessions. As usual, those of us who will not have the opportunity to be in Rome will read brief summaries about the events in the December 2012 newsletter.

In the current newsletter we have the pleasure to announce the laureates of the two annual EAS prizes. The 2012 Tycho Brahe is awarded to Prof. Reinhard Genzel in recognition of his outstanding contributions to European near-infrared astronomy, through the development of sophisticated instrumentation, and for groundbreaking work in galactic and extragalactic astronomy. The 2012 Lodewijk Woltjer Lecture of EAS is awarded to Prof. Wolfgang Hillebrandt for his fundamental contributions to the study of supernovae.

We also provide a heads up on the initiative taken by the EAS and the non-profit foundation MERAC (Mobilising European Research in Astrophysics and Cosmology) towards establishing a number of prizes for young astronomers.

The newsletter includes a presentation of the minutes of the EAS Council Meeting that was held in the town of Rolle, just outside Geneva, on the 31st of January 2012. In addition one can find a summary of a meeting that took place the following two days in which representatives from most of the EAS affiliated Societies and the EAS Council exchanged ideas on how to strengthen the collaborations and better shape the future of European astronomy.

Finally, a brief article which puts in perspective the personality and some of the significant scientific contributions of Franco Pacini, who unfortunately left us this year, is also presented by Marco Salvati, Franco's first student and lifelong collaborator.

Vassilis Charmandaris
University of Crete, Greece

MESSAGE FROM THE PRESIDENT: A PLEA FOR A STRONG EUROPEAN ASTRONOMICAL COMMUNITY

Francis Fukuyama, an american philosopher, economist and researcher in political sciences gave a most interesting and stimulating talk on the question of European identities in Geneva in November 2011. His thoughts help us understand the difficulties we face in building a European astronomical community. European astronomers have a double identity, a first one in their national community and a second one as Europeans. From Fukuyama's reflections, one realizes that national identities have very different meanings in different countries. To be French does not mean the same thing as to be Lithuanian or German or whatever else. It is the very notion of identity that changes with the country, not only the adjective describing the nation. It follows that «European identity» has different meanings for members of our national societies. These differences lead to varying understandings of the very nature of the EAS.

Interestingly, the adjective «European» has also a different meaning for different astronomers. For a number of us a European astronomer is user and contributor to ESO, for others it is an astronomer from a member state of ESA. For yet another group it will be an astronomer from a member state of the European Union. For yet another set of us «European» will

mean «not Soviet». I'm convinced that there are many more meanings to «European» in our community.

All of this makes the pursuit of a European identity very difficult, as a German astronomer will not understand the same thing as a Lithuanian astronomer or a Russian astronomer under «European astronomer».

These considerations make the building of a community called «European astronomy» difficult, they don't render this pursuit useless or irrelevant. Looking at a political map of the world shows that there are a number of large continental size entities like China, India or the US, and a large quantity of small entities in Europe, where a nation is very much smaller than a continent, with the possible exception of Russia. In astronomy as in other big science endeavors, the main research tools, observing instruments, are at a level of cost and development that exceed the possibilities of the European nations. These instruments, satellites, large radio telescopes and major ground based facilities, require the monetary and brainpower of entities at the continental scale. The development of these facilities therefore requires a continental organisation.

Europe has the largest economic power of all the major entities in the world. Europe's population exceeds that of the US by a large margin, it also exceeds the economic power of the US. These remarks are particularly striking if you consider, as we do in the EAS, the community that spans the countries that have affiliated societies to the EAS. (It would be interesting to quantify these statements). Europe ought therefore to be building the best and most powerful instruments on the world scene. It does so to some extent through ESO and ESA, but to some extent only. The scientific programme of ESA is, for one example, small compared to the equivalent US programme. It is also true that the Russian space science programme is not quite yet at the continental level on its own. Many leading projects, like the LSST, have no European counterparts. We conclude from these remarks that there is a strong need to improve the astronomical community identity within the European continent. A European astronomical community that recognises itself as a strong entity can only help us to take on the scientific world scene the place that should be ours.

The development of astronomy as one of the foundation of our culture, the reinforcement of its place among the cultural and scientific activities in our environment and the defense of these cultural and existential values in a world that has been dominated by economic considerations also require a strong European astronomical community. Only so can we try to influence the scientific and astronomical agendas of the various political players who decide upon societal priorities for us.

These considerations show that the build up of a European astronomical identity is indispensable for our success. This success is not only of importance for the astronomers, it is of major value to European society at large. A society that loses its cultural compass is bound to lose strength in the medium term.

It is the aim of the EAS to develop the European astronomy identity and thus to contribute to the success of European astronomy.

Thierry Courvoisier
President of EAS

NEWS

FROM THE EAS COUNCIL

The EAS Council met on the 31st January 2012 in Rolle, the day before the 2-day meeting of EAS with representatives of the Affiliated Societies. A standing item on the agenda is the European Week of Astronomy & Space Science. Mary Kontizas, our Vice-President, has as part of her portfolio of EAS duties the important task of acting as liaison between EAS on one hand, and the LOC and SOC on the other. You will have seen the regular items in the EAS e-News on EWASS 2012 as evidence of EAS' involvement. Giuseppe Bono was invited to attend the Council meeting and provide an update on the activities of the LOC. Contracts with the venue had been signed and a first announcement for the meeting would appear within two weeks. He provided Council with plenty of further details as evidence that preparations for EWASS 2012 in Rome this summer are in full swing. Council expressed its confidence in the LOC and looks forward to a busy and exciting week in Rome.

Even though the EWASS in Rome still has to happen, preparations are already being made for EWASS 2013 in Turkey, such as EAS working with our Finnish colleagues to draw up a list of candidates for the SOC. Nominated as joint chairs are José Miguel Rodríguez Espinoza and Esko Valtaoja.

EAS received from the Nominating Committee, and unanimously accepted, the nomination of Reinhard Genzel as recipient of this year's Tycho Brahe Prize. Following proposals made, EAS Council decided to honour Wolfgang Hillebrandt with the Lodewijk Woltjer Lecture. Both recipients will give presentations at EWASS 2012 in Rome.

EAS has tasked three Working Groups to draft reports on i) European Astronomy — reviewing national and international planning; ii) Future of Space Astronomy; and iii) Publishing in the age of Open Access. The first two Working Groups have pledged to prepare draft reports in Spring 2012 at which time they will be circulated among the membership for comments and feedback. The latter report is planned for later this year.

Joao Fernandes reported on his activities to make more user-friendly and promote the EAS Job pages on our Web. Since Joao took responsibility for this, the EAS job pages have enjoyed a healthy increase in postings. Several institutes and organisations now place as a matter of routine their job advertisements with the EAS. Joao also reported on the status of our efforts to convince organisations, such as observatories or

commercial entities with an interest in astronomy such as publishing houses, to become Organisational Member. EAS would be grateful to receive suggestions for possible Organisational Members from our members.

The next EAS Council meetings will be held during EWASS 2012.

Elias Brinks
Secretary, EAS

EAS, AFFILIATED SOCIETIES, AND EWASS MEETINGS

The EAS council met with the presidents of affiliated societies for two days in Rolle near Geneva in the beginning of February 2012. This was the second intensive meeting between the affiliated societies and the EAS, after the one that took place in Leiden in 2008. It was again a very lively exchange that will help us drive the EAS in directions that will prove strategical for European astronomy as a whole.

The meeting was aimed at discussing the format of the European Week of Astronomy and Space Science (EWASS) and to see how we can develop these meetings to make them become THE forum in which pan-European astronomy evolution is designed. Interestingly, the discussions turned out to be much broader than this theme.

The main weaknesses of the EAS are the fact that, in some countries, only a small fraction of the professional astronomers who are members of the national society have joined the EAS, and that the financial resources of the Society are modest. These difficulties must be met and corrected for the Society to be efficient on the European scene. This was seen by all participants to be of prime importance for all involved, the individual astronomers in Europe, the national societies and the EAS. It was repeated several times by delegates of the affiliated societies that it is of prime importance for the national communities to have a strong link with European authorities and that this link is best provided by the EAS. This means that the EAS is not a competitor for the national societies; it is rather an important element of their political action. Having expressed this very clearly, delegates of the affiliated societies made a number of concrete proposals to strengthen the EAS. All strive to increase the EAS membership. It was suggested, for example, that national society members become more or less automatically EAS members in conditions that would need to be specified. While this has obvious advantages, it also raises a number questions. The proposal will therefore be further discussed within the societies and within EAS Council.

The finances of the Society are improving, in large part thanks to the support given by organisational members. This was recognised by all and it was stated that efforts to attract further organisational members must be intensified, both through actions from Council as well as the affiliated societies.

The organisation of the EWASS meetings was also discussed and a large number of suggestions made. Some are directly applicable and council will make best use of them, others are more complex and will need resources, both human and financial. The medium term aim is to organise our meetings so that they attract some 1000 to 1500 astronomers in a well-structured meeting that also leaves room to discuss the evolution of European astronomy.

The quality of the discussions and the very positive climate in which they were held are the best testimony of the increasing collaboration at all levels of the European astronomical community. This is, I think, an excellent sign for the development of our science from Portugal to Russia.

Thierry Courvoisier
President of EAS

EWASS 2013

The 2013 European Week of Astronomy and Space Science (EWASS 2013) will take place in Turku, Finland from 8 to 12 July 2013. The Scientific Organizing Committee is co-chaired by Prof. Esko Valtaoja (University of Turku, Finland) and Prof. Jose Miguel Espinosa, Spain.

The call for expression of interest to organize EAS symposia during the meeting is open until the end of June 2012. Details are available in the EAS web page <http://eas.unige.ch/meetings.jsp>

EAS 2012 PRIZES

The European Astronomical Society awards its 2012 Tycho Brahe Prize to Professor Reinhard Genzel in recognition of his outstanding contributions to European near-infrared astronomy, through the development of sophisticated instrumentation, and for ground- breaking work in galactic and extra-galactic astronomy leading to the best evidence to date for the existence of black holes.

The 2011 Lodewijk Woltjer Lecture is awarded to Professor Wolfgang Hillebrandt for his fundamental contributions to the study of supernova explosions.

Tycho Brahe Prize to Professor Reinhard Genzel

The Tycho Brahe Prize is awarded in recognition of the development or exploitation of European instruments, or major discoveries based largely on such instruments.



The European Astronomical Society awards its 2012 Tycho Brahe Prize to Professor Reinhard Genzel, Director at the Max-Planck-Institute for Extraterrestrial Physics, in recognition of his

outstanding contributions to European near-infrared astronomy, through the development of sophisticated instrumentation, and for groundbreaking work in galactic and extragalactic astronomy.

Reinhard Genzel and the group led by him were responsible for building the SINFONI near-infrared integral-field spectrograph for the ESO Very Large Telescope, a key instrument for the study of the structure and dynamics of distant galaxies, as well as the detailed dynamics of the Milky Way Galaxy. He and his group have used this to great effect, pushing the boundaries of our knowledge, be this in our own backyard, studying the compact object that is at the centre of the Galaxy, or detecting forming galaxies at redshifts of $z \approx 2$.

Thanks largely to Genzel and his group, who measured in the near infrared the proper motion of stars near the centre of the Milky Way, the compact object at the galactic centre now arguably provides the best evidence for the existence of black holes. It offers an ideal laboratory for testing the black hole paradigm and general relativity in the strong field limit, and for investigating the interaction of a massive black hole with its environment. This links directly to the formation and evolution of black holes at large redshift and how they co-evolve with the stellar bulge of galaxies to form the relation between black hole mass and stellar velocity dispersion in the bulge, a key aspect of the understanding of the evolution of galaxies in the Universe.

Furthermore, Genzel and his group produced the first-ever survey of the kinematics of massive star forming galaxies at redshift 2, approximately 3 billion years after the Big Bang. This groundbreaking survey has been highly successful and has given key insights into the evolution of star-forming galaxies at that epoch. A related project focuses on star formation and galaxy evolution, using the IRAM Plateau de Bure interferometer to trace the molecular gas component of galaxies at redshifts between 1 and 3.

Reinhard Genzel was born in 1952 in Frankfurt am Main. He followed a classical high school curriculum, which gave him a lasting interest in history and archeology. He enjoyed his first training in physics in early years from his father, a well-known solid-state physicist. Sports were also part of his early years; he trained in handball and javelin/discus. He studied physics and astronomy in Germany, obtaining a PhD in radio astronomy in Bonn. He then spent a number of years in the US, in Harvard and Berkeley, before joining the Max Planck Institute for Extraterrestrial Physics in Garching. He spends now part of his time in Germany and part in the US.

Lodewijk Woltjer Lecture to Professor Wolfgang Hillebrandt

The Lodewijk Lecture honors astronomers of outstanding scientific distinction.

Supernovae, the spectacular brightening of a star that can appear almost as bright as its parent galaxy, have fascinated



physicists and astronomers for many decades or even centuries. It was suggested in the 1930s that supernovae could be the transition between a normal star and a neutron star, implying that the source of energy is gravitational. In the intervening time, it was also suggested that explosive nuclear reactions could be at the origin of the supernova phenomenon. It is now clear that both explosion mechanisms are at work, albeit in different types of supernovae. Those of type Ia are due to thermonuclear disruption of white dwarfs. Those of type II to the collapse of the core of massive stars.

These basic facts established, also with contributions of Hillebrandt and his team, it remains necessary to understand the physics at work. Core collapse leads to the implosion of the star, while it is an explosion that is observed. For many years, models of supernovae have failed to describe these explosions. Hillebrandt and his team have little by little incorporated many physical processes, like for example the interactions of neutrinos with stellar matter, in models of pre-supernova stars and are thus now becoming capable of following the star from the collapse of its core to the explosion of the outer layers. Similarly the work of Hillebrandt and his group is leading to a detailed understanding of the thermonuclear disruption of white dwarfs.

While understanding the physics of supernovae is a major achievement per se, it is also a major building block for the understanding of the evolution of galaxies and the Universe. Not only are supernovae of type Ia standard candles that allow us to “measure” the Universe, but all supernovae synthesize new elements and disperse the product of nucleosynthesis in their surroundings. They are thus an essential element in the long chain of events that leads to life. Hillebrandt and his team have contributed key elements to this subject.

Wolfgang Hillebrandt was born in 1944. He studied physics and mathematics at the University of Cologne, where he obtained his PhD in 1973. After some time at Caltech in California and some at the Technical University of Darmstadt, he joined the Max Planck Institute for Physics and Astrophysics in Munich in 1978 and then Garching, where he became director. He is Honorary Professor at the Technical University of Munich (Germany).

EAS ANNOUNCES THE MERAC PRIZES

The non-profit foundation MERAC (Mobilising European Research in Astrophysics and Cosmology) with seat in Switzerland and the EAS are working towards establishing a number of prizes for young astronomers, in complement of the existing Tycho Brahe Prize and Lodewijk Woltjer lectures. It is expected that Council will formalize the agreement with the MERAC foundation at its



first meeting in Rome in July. The EAS members are therefore hereby informed of this prize and encouraged to submit nominations.

The Inaugural MERAC Prizes Awarded by the European Astronomical Society will be presented at the Society's 2013 meeting. There will be 3 prizes awarded each year, one each in the categories: Theoretical Astrophysics, Observational Astrophysics and New Technologies (Instrumental/Computational). The prizes shall alternate by year for:

The Best Doctoral Thesis in the last 3 years and The Best Young Researcher (up to 10 years past PhD). The Inaugural awards will be in the latter category.

The Prizes will be 20,000 Euros each. Prize winners will be plenary speakers at the annual EAS meeting and must also lecture in Switzerland. Prize winners will be eligible for grants of up to 50k Euro with an additional amount up to 50k Euro that must be matched. Grants will be arranged directly between the MERAC Foundation and the Awardees.

Eligibility: The awardee must be a European (in the broad sense used by EAS) with a PhD awarded in 2003 or later.

Nomination packages should include a nomination letter by a member of EAS together with two endorsements by members from other countries. Nomination letters should focus on work done in the last five years and state the nominee's date of birth and month/year of their PhD. Nominations should include a brief citation to be used in the event of an award as well as a short bio of the nominee. A CV and publication list should be attached.

The date and details on the nomination procedure will be communicated as electronic news in the coming weeks.

2012 GROTE REBER MEDAL



The Grote Reber Foundation is pleased to announce the award of the 2012 Grote Reber Gold Medal for innovative and significant contributions to radio astronomy to Academician Nikolay Kardashev, Director of the Russian Astro Space Center of the Lebedev Physical Institute in Moscow.

Over more than half a century, Professor Kardashev has made a series of innovative contributions that have greatly impacted the current state of radio astronomy. In 1958 he showed, contrary to previous calculations, that very highly excited atoms can give rise to radio emission at a series of discrete frequencies in the centimeter band. With Kardashev's encouragement, two radio astronomy teams in Moscow and Leningrad were able to detect the predicted atomic radio emission. His later research has focused on the evolution of radio galaxies, cosmology, and black hole physics.

He is also well known for his pioneering work on "super civilizations", which has become the basis for observational SETI programs over the past half century. Kardashev described how civilizations might progress to first harness the power from their planet (Type I), their sun (Type II), and ultimately their galaxy (Type III) to power radio transmitters for interstellar communications.

More than thirty years ago Kardashev proposed placing a radio telescope in space to form an interferometer system together with ground based radio telescopes. Political and technical conditions in the USSR resulted in very slow progress, which was further constrained by the fall of the USSR and the resulting difficult financial situation for Russian scientists. With the improved conditions of the past decade, Kardashev was able to raise the project to the highest priority in Russian space astrophysics. In July of this year RadioAstron was launched into an orbit extending up to 350,000 km from the Earth; this will give an unprecedented angular resolution as small as 10 microarcseconds. This will be by far the best resolution ever achieved in astronomy.

«His contributions to the theory of radio spectroscopy, radio galaxies, cosmology, and the search for extra terrestrial intelligence (SETI) have defined the progress in these fields for nearly half a century,» said Ken Kellermann of the National Radio Astronomy Observatory in the USA.

David Jauncey of the CSIRO Division of Astronomy and Space Science in Australia commented that «Professor Kardashev's initiative with the launching of RadioAstron effectively opens a new window in high resolution astronomy.»

Nicolay Kardashev has shown much the same disregard for conventional wisdom in theoretical astrophysics as Grote Reber did for experimental work. It is fitting that Kardashev's RadioAstron spacecraft carries a plaque provided by the Grote Reber Foundation in memory of Grote Reber, who would have celebrated his 100th birthday on December 22, 2011.

The Grote Reber Medal was established by the Trustees of the Grote Reber Foundation to honor the achievements of Grote Reber and is administered by the Queen Victoria Museum in Launceston, Tasmania. Nominations for the 2013 Medal may be sent to Martin George, Queen Victoria Museum, 2 Invermay Road, Launceston, Tasmania 7250, Australia or by e-mail to Martin.George@launceston.tas.gov.au to be received no later than October 15, 2012.

FRANCO PACINI

Franco Pacini (Florence 10/05/39 – Florence 26/01/12) passed away after a rapidly progressing, debilitating illness. He will be deeply missed for his exceptional scientific standing, and for his truly enjoyable personal qualities. Even though he was born in Florence, the town where he grew up in was Urbino: Franco's love for Urbino lasted his entire lifetime,



and the town acknowledged this by granting him honorary citizenship.

It is however to Florence that Franco moved in 1978, taking up at the same time the full Professorship in astronomy at the local University, and the Directorship of the Arcetri Astrophysical Observatory; the latter position he held until 2001, when he took a seat on the Board of the newly formed National Institute for Astrophysics (INAF).

For those of us who had the opportunity to share his Florence years with him, Franco personified Arcetri: he was in the Observatory at any time of the day, including holidays, always full of enthusiasm and displaying a passionate love for astronomy, be it in a scientific discussion, or about the content of a University course, or some outreach activity for the general public. It will be difficult to become used to his absence.

Science

Franco Pacini got the Laurea degree in 1964 at the University of Rome under the tutorship of Livio Gratton. The dissertation and the first scientific papers [Memorie della SAI 1965, *Annales d'Astrophysique* 1966, *Physical Review* 1966 (with Silvano Bonazzola)] dealt with the internal structure of neutron stars, which at those times were hypothetical objects whose existence in the real world was far from certain. These papers are very technical, involving general relativity and strong interactions, quite far from the interpretational, intuitive works which would make him famous a few years later.

During his postdoctoral years at the Institut d'Astrophysique and Cornell University, Franco became interested in more general topics of high-energy astrophysics, a field which was then growing very fast following the discovery of quasars. In his list of publications one finds two papers on the possible role of quarks in astrophysics [*Nature* 1966, *Nuovo Cimento B* 1967 (with Edwin Salpeter)]. Franco was particularly proud of the former, even if it quickly turned out to be wrong. As atoms are formed from protons and neutrons inside the stars, so protons and neutrons could form from quarks inside quasars: the enormous binding energy could then easily explain the enormous luminosity of quasars, impossible to explain with stellar processes.

In 1967 Franco Pacini published the first “prophetic” paper on the connection between Supernovae and neutron stars (*Nature* 1967). It had already been suggested by other scientists that neutron stars could be leftovers from Supernova explosions, and that in one way or another a newly born neutron star could be responsible for the excess energy of the Crab Nebula. In his 1967 paper Franco suggested a specific mechanism for this process: it is plausible that a newly formed neutron star is endowed with a strong magnetic field and a high rotational speed. The resulting magnetic dipole radiation is a possible means to transfer the rotational energy lost by the neutron star to the Supernova remnant.

The 1967 paper was submitted on October 3rd. In November the Cambridge group (Hewish, Bell, et al.) started checking the anomalous signals noticed by Bell in July. The discovery of the first pulsars appeared in the press in January 1968, and the timeline explains why Pacini did not allude to pulsars in his 1967 paper.

The first months of 1968 witnessed a flurry of theoretical papers about the working of pulsars. In particular Thomas Gold (*Nature* 1968) proposed explicitly that they were rotating, magnetized neutron stars, adding the final piece to Pacini's scenario. Several people noticed that, although Gold and Pacini at the time were both in the same Cornell University building, and they had already collaborated on another topic, Gold did not quote the 1967 paper by Pacini. At any rate, Pacini wrote a further paper (*Nature* 1968), where he argued that at the center of the still mysterious Crab Nebula there should be a pulsar, still to be discovered, which would nicely close the chain of arguments and discoveries. The Gold (1968) paper was quoted. The Crab pulsar was indeed found, with the “right” rate of rotational energy loss, and pulsars were moved from frontier astronomy to classical astronomy.

In the following years Franco and collaborators explored various facets of the pulsar phenomenon, for example pulsar demography, secular evolution of the magnetic field, and emission in the optical and X-ray bands. At the same time, they tried to generalize the pulsar mechanism to other realms of high-energy astrophysics, such as the engine of gamma ray bursts (just recently discovered) or the non-thermal activity of ultra luminous infrared galaxies. Several of these attempts have had a long lasting impact: even today one is still exploring magnetar models to explain gamma ray bursts, and the infrared-to-radio and infrared-to-X-ray correlations in galaxies are sometimes explained in terms of a common origin, i.e., starbursts, Supernova Remnants and active neutron stars.

Science policy

Franco Pacini has also left his mark on planning and organizing astronomical research, both in Italy and in the international arena. He was the head of the Science Group of the European Southern Observatory (ESO) during the Geneva years 1975-1978, and from there he advocated the entry of Italy as a new member State. Then, for many years, he served on the ESO Council, making crucial contributions to the choices which have placed ESO at the forefront of astronomical research worldwide.

Franco was also President of the International Astronomical Union (IAU) for a triennium. In this capacity, he managed to gather all the interest and momentum necessary for obtaining the agreement of the United Nations on proclaiming the year 2009 “International Year of Astronomy”. The occasion was the 400th anniversary of the first use by Galileo Galilei of the telescope to look at celestial objects. The immediate outcome of those initial explorations had been the discovery of an external “planetary system” (the Jovian system), the “likeness” of celestial bodies to terrestrial ones, and -in short-

the displacement of astronomy from philosophy to an observational science.

Within Italy, Franco had a leading role in unifying all the regional Observatories within a single national Institute, INAF. The aim was to achieve better coordination of astronomical research, and also attaining a critical mass, needed to tackle more ambitious projects. Indeed, one of the first actions of INAF was to subsume and push forward two large instrumentation projects, the National Galileo Telescope (TNG) on the Roque de los Muchachos, La Palma, Canary Islands; and the Large Binocular Telescope (LBT) on Mt. Graham, Arizona. The former is an updated twin of the ESO New Technology Telescope. The latter is a very ambitious development led by a four-partner collaboration, including INAF, which could be considered to be a “link” between existing large telescopes (Keck, VLT, etc.) and the future very large ones (GMT, TMT, EELT). The spearhead of LBT is the adaptive optics system, based on two adaptive secondaries of innovative design which allow the telescope to obtain a better angular resolution than the space borne HST. It was a great satisfaction for Franco, already in the declining phase of his illness, to watch the superb images finally produced by “his” LBT.

Education and outreach

Pacini’s admiration for Galileo was not only for the scientist, but for the science writer as well. He would stress repeatedly that Galileo had written his major works in Italian, the “vulgar” language, instead of resorting to the Latin commonly used by learned men, in order to address the widest possible audience. Franco was extremely concerned that astrophysicists would only talk to other astrophysicists, while he was certain that the general public, and especially its youngest members, deserved to be informed about science as thoroughly as possible. He attributed to astronomy a special duty in this endeavor, since the beauty of the night sky and deeper astronomical images could easily attract non-specialists. During his last years in Arcetri, Franco committed an ever-larger fraction of his time to outreach activities, often undertaking long trips that must have taken a toll on his condition.

In his view, bridging the gap between scientists and non-scientists was one of the major goals of the International Year of Astronomy. For this reason, he accepted to give what turned out to be his last major speech, flying all the way to Rio de Janeiro in order to talk at the plenary session of the IAU General Assembly about (what else?) “The legacies of Galileo”.

Marco Salvati

INAF – Arcetri Astrophysical Observatory

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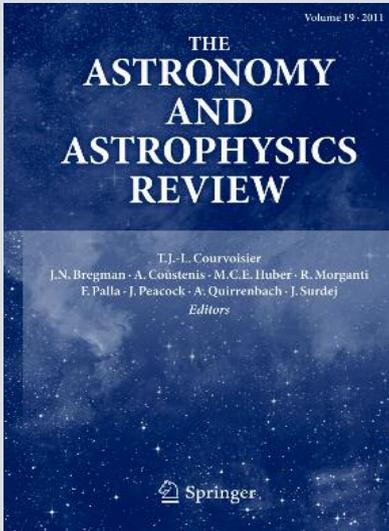
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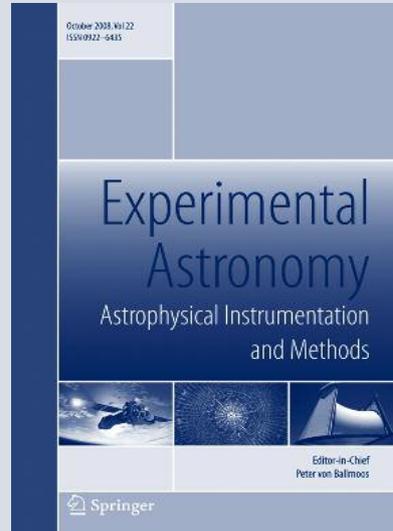


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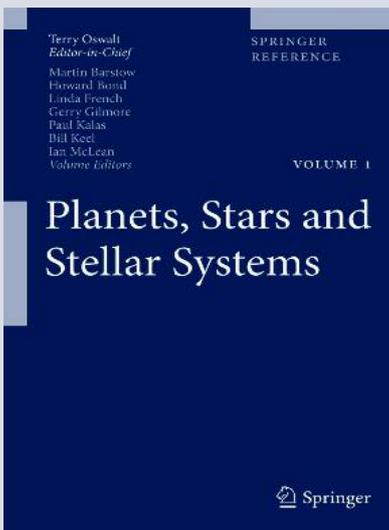


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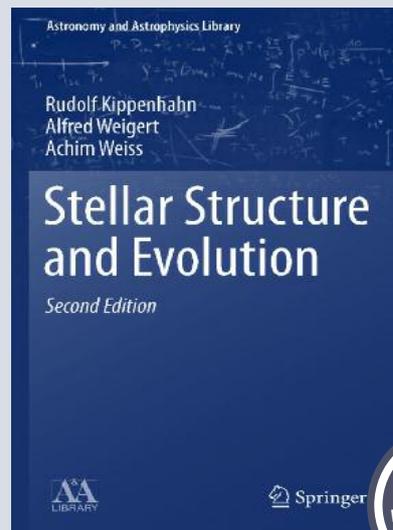


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